JANUARY, 1960

Commercial Fertilizer

and PLANT FOOD INDUSTRY

INDUSTRY SURVEY SHOWS OPTIMISM FOR 1960 SALES

SEE PAGE 19

Advertisement of NITROGEN DIVISION, ALLIED CHEMICAL



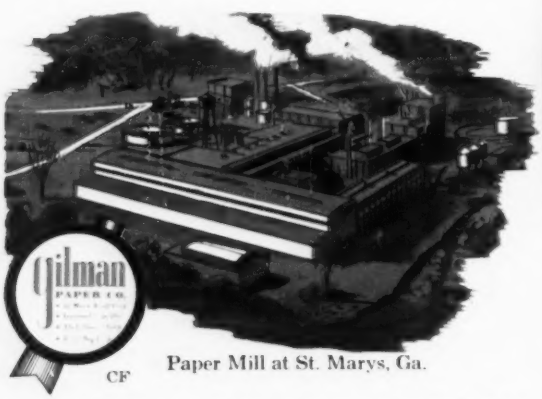
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This is the new 300,000 sq. ft. addition to Kraft Bag Corporation's converting plant at St. Marys, Georgia, scheduled to go "on stream" in February.

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Growers of specialty crops like citrus and tobacco



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Home owners who take pride in their lawns



Many others

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There is no better source of organic nitrogen than SMIROW TANKAGE. It is 100% natural organic—not a synthetic. SMIROW provides controlled release of plant nutrients for long-lasting, uniform feeding.

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- ***No Dust Problem***
- ***No Fire Hazard***
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A PRODUCT OF THE

SMITH-DOUGLASS

COMPANY, INCORPORATED • NORFOLK 1, VIRGINIA



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BETTER PROFITS

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Industrial Engineers and Builders

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Commenting Freely

by BRUCE MORAN

Every industry, fertilizer perhaps more than most, should be prepared for the sudden descent of an investigation or of a union bargaining team. One of the reasons Management so often fails in its efforts to defend itself and its policies is that little or no advance preparation is made.

These things are to be expected. Our industry should recognize it is involved in the interests of a great big group of voters—and be ready to answer calumny with fact. The NPFI is, of course, ready with the broad facts; but are you ready with the specific facts about your own operation: why it costs so much to produce; how prices have been kept down; how product has been improved for greater value?

The recent sudden problems that faced the pesticide people, the drug people—and may soon face some others— is a lesson we all should learn. When they invade your offices, or invite you to Washington, be ready for them. And be ready with economic as well as scientific answers. You are serving well. Get set to prove it any time the need arises—and keep your proofs up to date as your technology and your costs advance.



Sohiogen® Solutions and nitrogen materials add flexibility to your formulation



SOHIO

14-59

. . . and a complete selection of nitrogen solutions help you formulate high-analysis grades, keep production costs low

Sohio technical service out-dates the trial-and-error method of selecting nitrogen solutions.

Sohio specialists analyze your mixed fertilizer grades and your plant conditions. They match your requirements from the full line of Sohio nitrogen materials — ammonia, ammonium nitrate and urea — blended to a wide range of chemical and physical properties. Then they recommend the specific Sohiogen solutions and nitrogen materials that are right for your plant.

You'll save by using more of the low-cost nitrogen materials . . . less acid . . . and you have more room to use lower cost phosphates.

Call the "Man from Sohio" for details on Sohio technical service and a full line of Sohiogen solutions and nitrogen materials.

See Sohio first for high quality anhydrous ammonia — aqua ammonia — coated 45% or uncoated 46% urea — and 18 nitrogen solutions, including those containing urea.

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SWIFT'S PHOSPHATES

builds customer satisfaction
and repeat orders for You!



P-3

. . . And that *extra care* is just as real as the people who give it . . . people like your customers . . . people like your friends and neighbors—second and third generation people with the phosphate business literally bred into them working with Swift, the oldest phosphate operator in Florida.

Swift's extra care may very well offer you the opportunity to improve your customer satisfaction . . . your plant operations . . . and your profits. It's worth checking into! Have a Swift Phosphate Center Representative outline the advantages Swift offers you in phosphates—triple, rock or ground rock.

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SWIFT & COMPANY
PHOSPHATE CENTER
Bartow, Florida

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105TH YEAR

To Serve Your Industry Better WITH PHOSPHATE ROCK,
GROUND PHOSPHATE ROCK AND MINUTE MAN TRIPLE SUPERPHOSPHATE



PRODUCTS AND SERVICES FROM IMC

- **Phosphate Rock**
- **Triple Superphosphate (Coarse, Granular, Run-of-pile)**
- **Phosphoric Acid**
- **Muriate of Potash (Coarse, Standard, Granular)**
- **Sulphate of Potash**
- **Sul-Po-Mag**

Manufacturing and Technical Service
Transportation Service
Customer Service
Management Services
Marketing Services

INTERNATIONAL'S FULL ORBIT SERVICE

IMC marketing service includes special promotion material imprinted with customer's brand name.



Determined to help customers sell their products and earn more profit, IMC makes available total marketing assistance through its sales representatives. In effect, your IMC man is a

MARKETING MAN WITH A MISSION

Your IMC sales representative offers you valuable assistance in marketing your products at a profit. He recognizes the need for selling cooperation between you, the fertilizer manufacturer, and IMC, the supplier of fertilizer materials. And with that recognition, he has a personal interest in doing everything he can to help you build product volume.

For example: the Planalyzer that simplifies charting sales activities twelve months in advance. There's also the farmer-dealer kit which includes practically every sales aid you need to hold a successful farmer-dealer meeting. How to advertise and promote your product is outlined in a down-to-earth manner in a 68-page booklet.

Other ways he helps include how to determine the potential of your market and how to find prospects . . . how to select and assess your salesmen. Still other IMC helps give you promotional material imprinted with your brand name . . . crop packages, fertility charts. Transportation is vital in IMC's marketing program . . . new methods and techniques that help lower your costs and provide a variety of assistance in handling and moving finished goods or ingredients.

But going beyond this, IMC has presented sales sessions aimed specifically at training fertilizer manufacturers' salesmen in more effective methods. The program covered ten principal cities and is further supported by sales assistance at your plant for your individual salesmen.

This *total marketing service* is unique . . . expressing the full-function assistance of a full-line company. It is geared to apply in all phases of your operation — nitrogen, phosphorus or potash — through total technical service, research, merchandising.

Your IMC representative can bring this total service to you, and help you plan for higher profit. Just give him a call.

Products for growth* IMC

*Trademark

AGRICULTURAL CHEMICALS DIVISION

INTERNATIONAL MINERALS & CHEMICAL CORPORATION

Administrative Center: Skokie, Illinois

Help in lining up materials, talks, and facts for meetings is part of IMC's marketing assistance.



Market analysis aid is another important service from IMC's Man With a Marketing Mission.





JUST AROUND THE CORNER



By Vernon Mount

POLITICIANS are approaching this election year like the man who took a bath every Saturday, whether he needed it or not. There is excellent Page One stuff in stripping an industry to the buff in the glare of eager newspaper spotlights, whether they need cleaning up or not.

EXPECT FANFARE on many subjects – some basic, some not: phony list prices; the morals of TV, Radio, the Disk Jockeys; shall the consumer continue to splurge with credit cards while commercial money is tight; shall wage settlements be forced by law; shall the chips fall where they may in agriculture, or should we continue to protect the ineffective farmers from themselves?

THERE WILL BE wrangling and gnashing of teeth; there will be florid forensics; there will be some conclusions. Let us hope, somehow, the Congress will be guided to sane answers for the good of all the people!

Yours faithfully,

Vernon Mount

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ESCAMBIA CHEMICAL CORPORATION

AMMONIATES — SULPHUR — POTASH
INDUSTRIAL AND AGRICULTURAL CHEMICALS



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Chase customers call the tune—and Chase follows through. The key to our whole business is giving *you* the bags you want, when *you* want them, made right, and priced right. But it doesn't end with filling your order . . . Chase continues working in complete harmony with you . . . making available the newest and most efficient materials, helping cut costs, eliminating waste, by individualized attention to your requirements. Some may call it "extra" service . . . at Chase, we know it's the *ONLY* right way to serve you.



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BAG COMPANY

General Sales Offices: 155 East 44th St., New York 17, N.Y.

BAG PLANTS AND SALES OFFICES COAST TO COAST
—A NATIONWIDE STAFF OF BAG SPECIALISTS

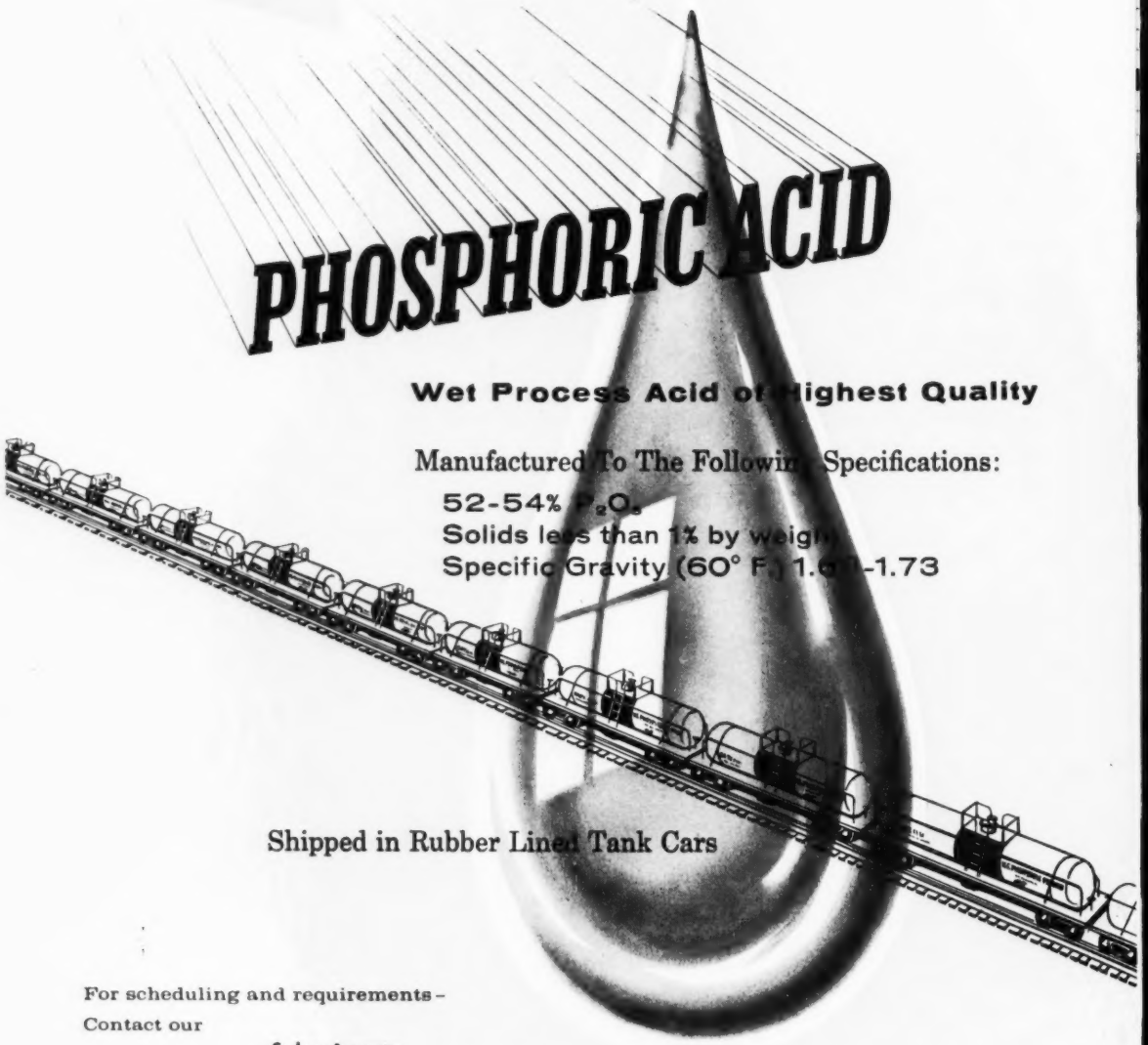
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Solids less than 1% by weight
Specific Gravity (60° F.) 1.6[illegible]-1.73



Shipped in Rubber Lined Tank Cars

For scheduling and requirements –
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A free flowing product of uniform particle size and guaranteed chemical analysis—Will not cake or set up under normal storage conditions— **DIMON** makes possible a wider range of formulations, reduces material costs, increases production rates and produces a better conditioned fertilizer.

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U.S. PHOSPHORIC PRODUCTS
TAMPA, FLORIDA
Division
TENNESSEE CORPORATION



Rides Herd on the "Cars"

He keeps tabs on the Phillips fleet of ammonia and nitrogen solution tank cars. He's the man who "pulls those extra cars out of the hat" when they are needed to handle an unexpected rush of business. Many of our customers manufacturing fertilizer have been pleasantly surprised at how quickly these extra tank cars are rounded up.

Actually our "magic hat" is the world's largest fleet of nitrogen-hauling tank cars. Through the use of strategically located bulk storage facilities and tank car pools, we are prepared to rush deliveries of those desperately needed cars that you hadn't figured on before the season began.

The assurance of an adequate supply—even to handle unforeseen business—is just one of the many ways in which Phillips can serve you. For example, Phillips will assist in sales meetings for your salesmen and dealers . . . compute cost-cutting formulations on its electronic computer . . . and, of course, supply you with high quality Nitrogen Solutions, Anhydrous Ammonia, Ammonium Nitrate, Ammonium Sulfate, and Triple Superphosphate. For complete details contact the nearest office listed below.

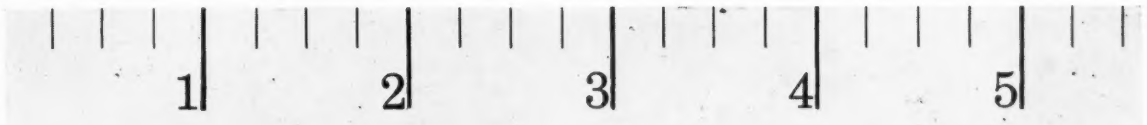
"Good name to grow by"

PHILLIPS 66

PHILLIPS PETROLEUM COMPANY, Bartlesville, Oklahoma

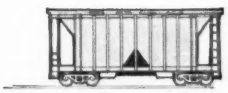
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ATLANTA, GA.—*1428 West Peachtree Street, Station "C" P. O. Box 7313*
BARTLESVILLE, OKLA.—*Adams Building*
CHICAGO, ILL.—*7 South Dearborn St.*
COLUMBUS, OHIO—*395 E. Broad St.*
DENVER, COLO.—*1375 Kearney St.*
DES MOINES, IOWA—*6th Floor, Hubbell Bldg.*
HOUSTON, TEX.—*6910 Fannin Street*
INDIANAPOLIS, IND.—*3839 Meadows Drive*
KANSAS CITY, MO.—*201 E. Armour Blvd.*
MAPLEWOOD, N. J.—*2075 Millburn Ave.*
MINNEAPOLIS, MINN.—*215 South 11th St.*
OMAHA, NEB.—*3212 Dodge St.*
PASADENA, CALIF.—*317 N. Lake Ave.*
RALEIGH, N. C.—*401 Oberlin Road*
SALT LAKE CITY, UTAH—*68 South Main*
SPOKANE, WASH.—*521 E. Sprague*
ST. LOUIS, MO.—*4251 Lindell Blvd.*
TAMPA, FLA.—*3737 Neptune St.*
TULSA, OKLA.—*1708 Utica Square*
WICHITA, KAN.—*501 KFH Building*



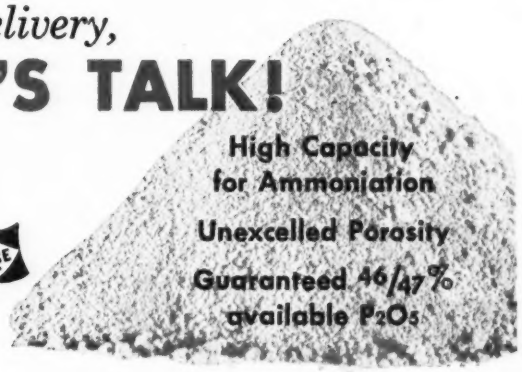
A NEW Measure of Values for Mixing Triples . . .

A TEST CARLOAD

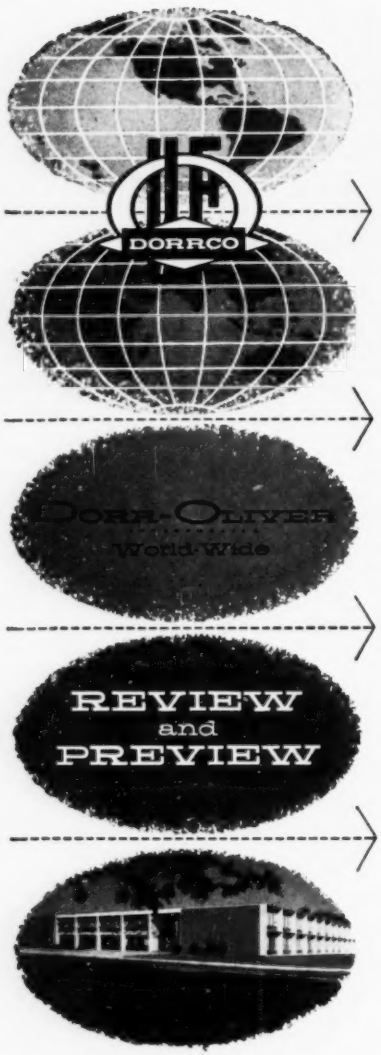


OF NEW DAVISON HI-FLO RUN-O-PILE TRIPLE SUPERPHOSPHATE IS THE ONE SURE WAY TO PROVE TO YOURSELF THAT HI-FLO CAN SOLVE YOUR MIXING PROBLEMS

. . . whether they be quality, delivery, dependability or service. **LET'S TALK!**



W.R. GRACE & CO.
DAVISON CHEMICAL DIVISION
BALTIMORE 3, MARYLAND



1959 has been a paradoxical year. With the public press reporting good business for the country as a whole, it has taken a discerning student to discover that the part of the economy relating to capital goods has only bettered to a modest degree. This fact, plus the low carryover of orders from 1958, caused us to have an unhappy year financially.

However, with the modest but positive increase in business in the U.S.A. and the substantial increase in orders for most of our overseas areas, we look forward with confidence to 1960. Improvement of efficiencies in all internal departments has also been positive and is continuing both as to costs and the time it takes to do things. This naturally will be beneficial to our customers.

SUGAR — Orders from new and expanding cane sugar factories in India for RapiDorr Clarifiers and Oliver-Campbell Filters contributed significantly to the business of our subsidiary in that country. And in other locations around the world—Mexico, British Honduras, Egypt, Mozambique and Swaziland, for example — these two units continued to be accepted as standard in the industry. In beet sugar, a British producer purchased First Carbonation Thickeners and Vacuum Filters for two new mills; and two Italian mills will use a total of four Vacuum Filters.

PETROLEUM—A variation of the initial application of the DorrClone Desanding System in fresh water treatment is the desanding of salt water used to recharge wells for secondary oil recovery at a West Coast location. Outside the U.S. our Japanese representative is fabricating filters for use in a catalytic cracking process and our British company will supply oil-water separators for both British and Brazilian refineries. Also of interest is equipment for a pilot plant to recover oil from tar sands.

PROJECT ENGINEERING — This phase of our operations was also particularly active in 1959 as design of phosphoric acid plants to be located in Idaho, Great Britain and Ireland and a phosphoric acid and triple superphosphate installation for Brazil was commenced. Also in the fertilizer field was a contract for process modification of a large British plant.

Late in the year, work was started on design of a large limestone crushing plant for which D-O will also purchase equipment and other materials. Our French subsidiary and domestic company working jointly virtually completed design of a large Yugoslavian copper concentrator. Two smaller but nonetheless significant projects—both including laboratory testing and feasibility studies — involved production of a limestone substitute to be used for self-fluxing sinter in blast furnace operation and the recovery of nickel from waste pickle liquors.

FLUOSOLIDS SYSTEMS — One of the new applications of the FluoSolids system this year has been preheating coarse shale in a special three-compartment reactor to produce light-weight aggregate. A second is drying iron ore before magnetic separation and concentration. Currently, the iron ore industry appears to have other drying applications ideally suited to fluidization. FluoSolids roasters are also under construction for a Canadian smelter where only partial sulfur removal is required.

Projects involving already proven applications have included in 1959 a pyrite roaster for a sulfuric acid plant on Formosa, three systems marketed by our Italian subsidiary for roasting pyrite to produce sulfur dioxide for pulp mill bisulfite cooking liquor and for a large zinc roasting installation in Yugoslavia, a large coal dryer for a Western producer, a copper-cobalt roaster in the Belgian Congo and detergent dryers in the United States.

METALLURGICAL — As in past years our work in this area has involved virtually all of the metallic minerals from gold to iron ore. The latter field as been among the most active with purchase of Sizers and Filters for Canadian washing plants, DorrClone classifiers for desliming prior to flotation, and Thickeners, Filters and Pumps for recovery of blast furnace flue dust.

PULP AND PAPER—A new tool for this industry is a novel pressure washing filter. Installation of the first U.S. manufactured unit is being made in a Southeastern pulp mill. Ideally suited to brownstock washing, the unit has a number of advantages from both the operating and installation standpoints.

Recausticizing systems including process flowsheet innovations, such as precoat operation of the Lime Mud Filter and application of a two-compartment White Liquor Clarifier with special feedwell, were purchased for new or expanding mills in Canada, India, the United States, Portugal, Japan, Yugoslavia, Scandinavia and the Philippines.

Around the world the American Saveall continued to be recognized as the major means of recovering paper machine fibers from white water and in the U.S. the largest bleach tower designed to date will soon go into operation. An unusual and interesting application of the Merco Centrifuge is recovery of by-product material used as a drill mud dispersant at a West Coast mill.

CHEMICAL — During the year applications of the Plastic Filter, first introduced in mid-'58, were broadened to include a variety of fine chemical and pharmaceutical separations and washing of acid leach liquors from metallurgical pulps. Also in the realm of new applications is dewatering of various plastics using the Mercone Screening Centrifuge.

As usual, our standard line of equipment played a major role in a great number of Italian chemical plant expansions and in large new or expanded facilities in France, Germany, Spain, Mexico and here at home.

FOOD PRODUCTS — Successful application in 1958 of the Mercone-Precoat Filter combination for apple juice processing has resulted in orders from two West Coast packers for similar stations.

In starch, several domestic and overseas producers will employ D-O Centrifugals of virtually every design for current modernization and process modification projects. Our Dutch subsidiary has put into operation three corn and potato starch washing and processing plants in Germany and Finland.

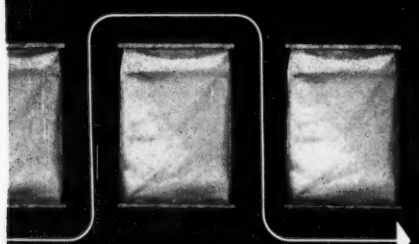
We have noticed with much concern the apparent growing tendency of many users of services and equipment to buy almost exclusively on price rather than on demonstrated product quality and the essential engineering services made available to them during planning and after installation. This is not a new subject — and one on which there has been much forceful editorial comment in the technical press.

This practice confronts the supplier with the practical short range choice of sacrificing product quality and needed engineering, losing the business, or taking it at a loss. For our own part, we do not propose to fall into this trap which, economic considerations aside, can only result in arresting technological advance and which could have a profound effect on the leadership of the free world in things technical.

J. D. HITCH, JR.
Chairman of the Board

December 1, 1959

in the last two years over 210 multiwall users cut their packaging costs through a UNION-CAMP



PLANT SURVEY

another FREE service of the ★5 *Star Packaging Efficiency Plan!*

UNION-CAMP's 5-Star Plan has helped over 210 firms reduce their materials handling costs within the last two years alone. The economies resulted directly from a single service feature of the plan . . . a plant survey.

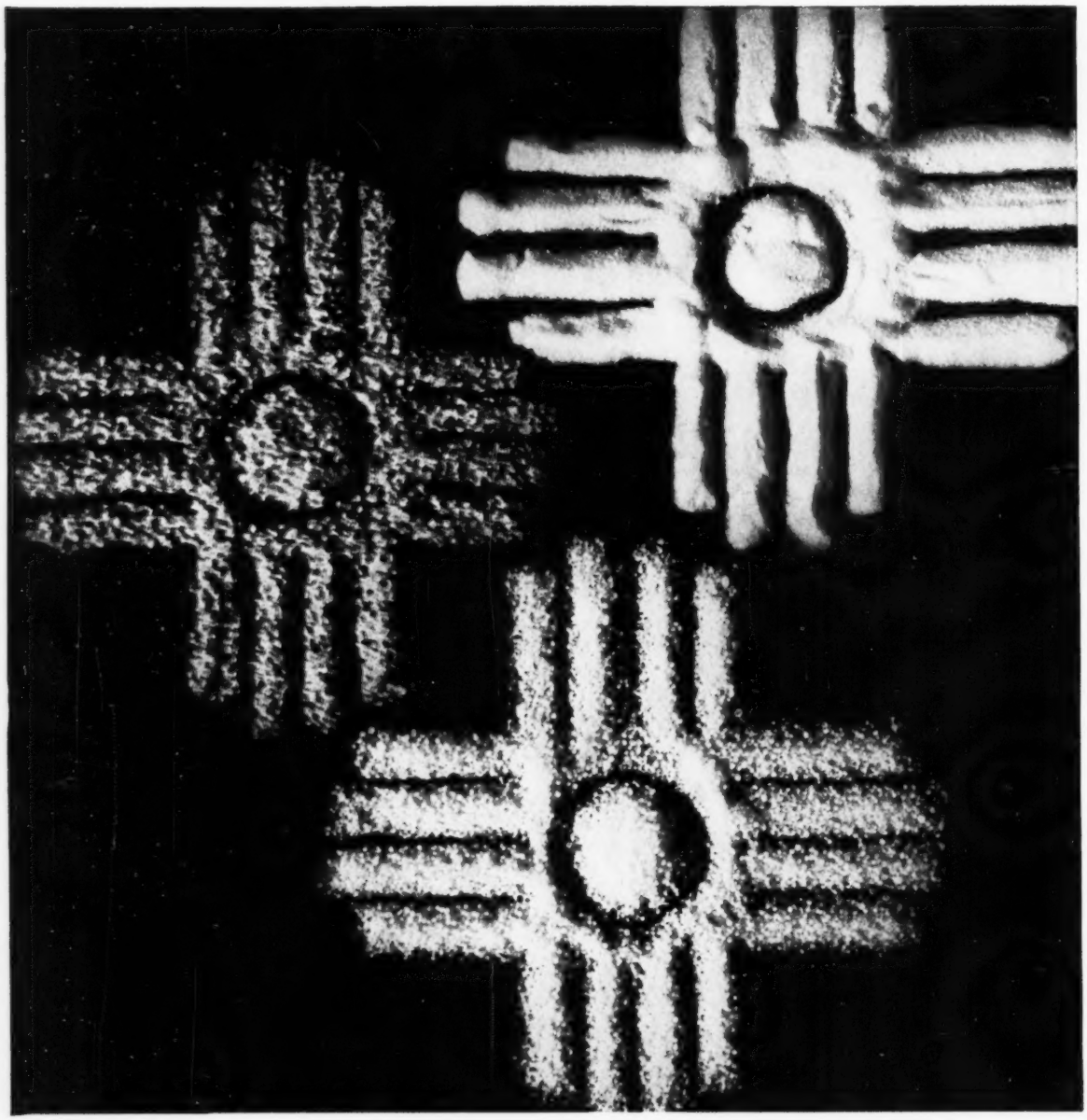
One survey, made for a midwest packer, speeded his multiwall handling operation by 50 per cent. Another company, by following UNION-CAMP recommendations, released labor for more productive functions and saved $37,584. A third multiwall user lowered his costs by nearly $50,000 a year. And there are many more such success stories.

A UNION-CAMP multiwall specialist will be glad to review your present operation . . . show you how the 5-Star Plan can help produce more economical, more efficient control. The plan also covers bag design, bag construction, specifications control and packaging machinery. It's yours without cost or obligation.

Why not start cashing in on it today?

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MULTIWALL BAGS
Union Bag-Camp Paper Corporation 233 Broadway N Y 7 N Y

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To help you make better fertilizers... three grades of specially-sized potash



Muriate of potash ideally sized to meet your fertilizer manufacturing requirements. For mixed fertilizers, you get most potash per ton from our two white grades—Higrade muriate, and Higrade Granular muriate—each contains 62/63% K_2O. For fertilizers requiring a larger particle size, choose our Granular muriate containing 60% K_2O. All three grades are specially refined to resist caking and remain free-flowing. The particle sizes are uniform.

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UNITED STATES POTASH · PRODUCT OF NEW MEXICO U.S.A.

MEMBER: AMERICAN POTASH INSTITUTE

REG. U.S. PAT. OFF.

Arcadian® News

Volume 5 | For Manufacturers of Mixed Fertilizers | Number 1

FERTILIZER SURVEY SHOWS OPTIMISM FOR 1960 SALES

Industry Leaders Are Enthusiastic

Forecasts by leading fertilizer men around the country indicate a good fertilizer year ahead. Many factors contribute to the general feeling of optimism that 1960 will be a promising year for sales of mixed fertilizers, according to a recent national survey conducted by Nitrogen Division.

The survey, designed to report industry leaders' opinions and help determine the market potential for this year, produced a host of comments which clearly point out that the swing toward increased use of fertilizer continues. Farmers are bringing more and more acreage under fertilization, and at the same time are stepping up application rates. The trend toward use of higher analysis mixed goods also is on the upgrade, fertilizer leaders note.

Progressive, management-minded farmers are finding that good mixed fertilizers with high nitrogen content are indispensable to profitable production of so many crops. This agri-business concept has helped create an awareness among farmers of the real money-making value of intelligent fertilization. It also is receiving widespread support from federal and state agricultural leaders who encourage the use of more fertilizers for better crop growth.

A chief factor which points toward increased use of fertilizer is the low soil fertility now existing in most farm areas. High yields in 1959 depleted soil fertility, so even though acreages of major crops this year will probably be about the same as last year, it is likely that more fertilizer will be applied.

In 1959, crops were planted on large acreages that formerly were in the soil bank. Soil fertility had been built up. This will not be true this spring, fertilizer experts explain. They emphasize that the plant food removed by harvests will have to be replaced just to maintain yields.

With the outlook for lower prices for many farm products this year, farmers will want to increase crop production to improve income. A large majority of growers will be counting on fertilizer as their best bargain to get this desired production.

Most fertilizer leaders agree, the survey indicated, that 1960 could be a banner sales year—barring unusual weather conditions which might reduce the large fertilizer applications that are expected.

Northeast has High Hopes

"The picture is really bright in the New England states." This was the commentary of a key fertilizer man who went on to say: "Potatoes are marketing at exceptionally high prices, which will lead to increased fertilizer application next season. We might have more potato acreage, as well. Dairy farmers are as solid as ever, and should buy fertilizer again this year. Small grains are off, so there will probably be less movement there."

Fertilizer people in Pennsylvania have been concentrating on raising plant food rates for the past two years. They believe their efforts will pay off with bigger fertilizer usage in plow-down on corn land this spring. A sample opinion from the southwest part of the state indicated that fertilizer application might go 10% higher than last year.

Throughout Pennsylvania and New York, dairymen will be better customers for fertilizer than ever before, according to most fertilizer manufacturers. However, cash crop vegetable farmers in these states probably will buy a little less than in 1959. The New Jersey prospect is only fair, industry leaders predict, due to a poor crop year. Long Island potato fertilizer demand should go unchanged, and small package fertilizers look promising in that area.

Generally, higher nitrogen ratios are gaining wider acceptance in the Northeast. There has been a surprisingly heavy demand for new 15-10-10, it was pointed out. This fertilizer chalked up unprece-

(Continued on following page)

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dented sales during its introductory year. Use of 1-1-1 still is increasing, and sales of 2-1-1 also are climbing.

Midwestern Demand Excellent

This fast-growing fertilizer market continues to expand. An Iowa fertilizer manufacturer forecasts that his state can look forward to "the biggest spring movement ever, because of excellent yields last year and low fall application." He also cites good moisture conditions in the soil as a favorable factor.

Similar opinions are expressed in Nebraska and Kansas. The industry there believes it will enjoy a large spring demand for mixed fertilizers because of 1959's outstanding yields. Agronomists report there is excellent sub-soil moisture—the best since the fall of 1951. Fertilizer men say there is another noteworthy fact which will have a bearing on sales this spring: wheat farmers in these states are swinging over to higher nitrogen mixed goods at planting time.

A heavy sales season is predicted for Minnesota and Wisconsin. "One big reason," a fertilizer industry spokesman says, "is the extremely poor fertilizer season we had last fall. Early frost and snows prevented field work after harvest."

Both Missouri and Illinois had slow fall movement—the result of heavy fall rains and early cold weather that shortened the wheat planting and fall plowdown seasons. Here again, spring sales are expected to be heavy, industry leaders believe.

An Indiana fertilizer manufacturer says sales in his state should be "every bit as good as last spring, but movement will be late, starting in March." The prospect is even better in Michigan. "We have a combination of a fine crop year—particularly in corn, beets and beans—and low fall deliveries will mean heavy movement this spring," a Michigan fertilizer man states. Movement in Ohio will be greater than last year, and early, if weather permits.

Great Fertilizer Response

A number of favorable signs combine to point toward a big fertilizer year in the Midwest, but perhaps one of the most significant is the great response which corn growers have obtained from fertilizers. Performance is really building a fertilizer market in the corn country, according to Midwestern fertilizer people.

Throughout this rich agricultural area, farmers continue to increase both the application rate and nitrogen content of mixed fertilizers. In Indiana, for example, good success last year will get the 2-1-1 ratio off to a flying start for plowdown, starter and side-dress. Higher analysis and a higher percentage of nitrogen in mixed fertilizers are more popular in Ohio, Illinois and Iowa, manufacturers explain.

The high acreage of the Midwest's total land which will be going into corn creates a large demand for fertilizer. One sales representative sums it up this way: "We think there are plenty of good reasons for all this optimism."

Southern Predictions

Southern predictions indicate the average of fertilizer sales for the area will rise above last year's level. Here, as in other areas with large-scale demonstration programs that show benefits of heavy fertilizer use, the increased crop yields which result from these demonstrations help promote greater fertilizer demand.

"Intensified Soil Fertility Programs" sponsored by group effort in several Southeastern states are accomplishing outstanding results. Every farm in a county is soil tested and every farmer is encouraged to fertilize at least one crop according to its needs.

In North Carolina, a fertilizer leader expects sales to go up by about 5%. However, Virginia will probably drop below last year's total. Opinions from Maryland, Alabama and Florida indicate these states can be expected to match their 1959 performances. A Georgia supplier of mixed goods thinks his market may be off a little because of a poor crop year.



Here is one of the many Nitrogen Division full-page farm magazine advertisements, promoting the use of mixed fertilizers.

The consensus from Kentucky and Tennessee, however, is that manufacturers will enjoy a 10 to 15% bigger demand for fertilizer over last year. While not seeing so high a rise, experts in the Delta think more fertilizer definitely will be bought this year.

Sales of mixed goods in South Carolina are expected to be similar to last year in total tonnage, with some possibility of earlier movement. Intensified Soil Fertility Programs are making progress in this state, and in Georgia, North Carolina and Alabama. As these programs spread across the country, they are bound to increase tonnage and encourage use of the right analyses.

One Eastern seaboard manufacturer notes a highly-significant trend toward sales of granular and semi-granular mixed goods. Maryland is seeing wider use of high analysis grades like 15-10-10.

Prospects for the West

Comments from the West indicate an expected 10 to 15% increase in tonnage this spring for the Rocky Mountain area. Some of the largest crops of sugar beets, corn and small grains ever harvested were registered there in 1959. Growers are being urged by sugar companies and state agricultural colleges to fertilize more heavily in 1960.

Western fertilizer men believe rates of application will continue to increase—about 15 to 20% over last year. They think the future will see more and more fertilizer applied before planting.

In West Texas and New Mexico, industry people say the general outlook is excellent. Bumper crops were produced last year, and farmers generally have funds available for fertilizer. "Last year," one agricultural expert states, "farmers who used generous amounts of fertilizer reaped a large return, and this should lead to even greater sales this year. We also expect an increase in cotton acreage in this area." He goes on to say that more pre-plant fertilization and less side-dressing are predicted for the coming season.

Spring Outlook Optimistic

Nitrogen Division's comprehensive survey of opinions and predictions across the country adds up to this: There's a good spring season ahead!

While there are a few areas where some pessimism is voiced, the fertilizer industry as a whole is booming with optimism. It looks like another good year for sales of mixed fertilizers.

Arcadian News for Fertilizer Manufacturers . . . . . from NITROGEN DIVISION



YOU NEED MORE THAN SOIL TESTS TO DETERMINE PLANT FOOD NEEDS

How much plant food should the farmer apply to his fields? Most farmers and fertilizer dealers are under the impression that a soil test answers this question. It does no such thing! A soil test tells only the amount of plant food that is available in the soil. To determine how much fertilizer to apply we also need to know: ***How big a crop does the farmer wish to grow?*** If no yield goal is set, then recommendations based on soil tests are usually made for an average yield. Sometimes, results of fertilizer use are disappointing for this reason alone.

It is important to remember that plants are not able to take from the soil all of the plant food which shows up in the soil test. Roots do not touch all soil particles. Corn roots, for example, touch only 5 to 10% of the soil particles in the root zone. Plant foods such as nitrogen, phosphorus, potash and calcium do not mix in soils like sugar in coffee.

Soil scientists have determined that 50% to 75% of the nitrogen applied is picked up by the first crop of corn. Nitrogen is the most mobile and is the most available of the three major plant foods. Phosphorus usually is the least available, and under average conditions, in the year after application, crops may take 20% to 40% of applied phosphorus out of the soil. In some cases, no more than 15% of the material is taken up because of such factors as low pH, improper application or poor weather. Potash applied in fertilizer is more mobile than phosphorus, and is about 50% to 60% efficient in its uptake by the corn plant.

Thus a good plant food prescription plan takes into account the following:

1. Availability of plant food in the soil.
2. Efficiency of fertilizer to be applied.
3. Yield of crop to be produced.

The fertilizer dealer who succeeds builds a reputation for dependability. The prescription plan wins satisfied customers who stay sold on good fertilizer service. These customers produce greater and steadier profits for the fertilizer dealer. Fertilizer dealers, agricultural advisors or farmers—whoever determines how much fertilizer should be applied to a given field—have a solid basis for developing a realistic plant food prescription. Farmers today are willing to spend more time determining the amount of plant food they should use. Gone are the days when growers put on 100 pounds of 2-12-6 to the acre for any crop with the idea that this would surely do the job.

At that time, few persons realized that with 60% efficiency, the 2 pounds or 32 ounces of nitrogen in this combination were really only giving them 20 ounces of this valuable plant food per acre. And even fewer realized that this 20 ounces of nitrogen was only enough to produce an increased yield of 1 bushel of corn.

Farmers used to plant 16,000 corn plants per acre. By dividing 20 ounces of nitrogen into 16,000 parts, one can see even more dramatically the minute amount of nitrogen that was given to each corn plant. Agriculture has come a long way from the time when 100 pounds of 2-12-6 were popular. Now we find progressive growers applying 150 to 200 pounds of actual nitrogen per acre.

Here is a typical example of how a plant food prescription for a 100-bushel corn crop would be calculated. Suppose a test shows the soil contains 250 pounds of nitrogen, 75 pounds of P_2O_5 and 180 pounds of K_2O per acre. The amount of food available to plants actually would be 100 pounds of nitrogen, 30 pounds of P_2O_5 and 72 pounds of K_2O. The farmer would be short about 60 pounds of actual nitrogen, and it can be figured quickly that he would need to add about 100 pounds of nitrogen, 60% of which would give him the 60 pounds required.

Actual P_2O_5 would be short about 30 pounds, and he would have to add about 100 pounds to make up for the inefficiency of this ingredient. The correct amount of K_2O is a little easier to calculate because it is 50% efficient, so the farmer knows he is short about 50 pounds. He would need to add 100 pounds in order to meet the requirement.

With the addition of the above amounts of each plant food, the farmer now has the requirements of 160 pounds of nitrogen, 60 pounds of P_2O_5 and 125 pounds of K_2O that will enable him to grow a 100-bushel corn crop.

Since any one year's crop can remove only part of the fertilizer elements in the soil, a considerable amount remains in the ground to feed succeeding crops. Even though a farmer keeps accurate records of fertilizer applications and crop yields on each field, rainfall, soil type, crop rotation and other factors can vary this carryover of fertility in the soil. Accordingly, a soil test every few years helps the farmer keep track of this soil fertility buildup, so that his prescriptions for adding fertilizer will be more accurate. A soil test every year, of course, would give a more exact basis for fertilizer prescriptions.

More than 45 factors affect the yield of a crop, and nitrogen, phosphorus and potash are not the only things for the farmer to consider. But when he does apply the necessary plant food, he is far more likely to get the yield he desires. Good yields usually are planned. As a rule, they just don't happen. Urge your fertilizer dealers to adopt the plant food prescription method when they make fertilizer recommendations. For everyone who has tried it, this realistic sales technique has paid big profits!

HERE'S THE BIG LINE OF Arcadian® NITROGEN SOLUTIONS

When you purchase your nitrogen requirements from Nitrogen Division, Allied Chemical, you have many different nitrogen solutions from which to select those best suited to your ammoniation methods and equipment. You are served by America's leading producer of the most complete line of nitrogen products on the market. You get formulation assistance and technical help on manufacturing problems from the Nitrogen Division technical service staff. You benefit from millions of tons of nitrogen experience and the enterprising research that originated and developed nitrogen solutions.

	CHEMICAL COMPOSITION %						PHYSICAL PROPERTIES		
	Total Nitrogen	Anhydrous Ammonia	Ammonium Nitrate	Urea	Water	Neutralizing Ammonia Per Unit of Total N (lbs.)	Approx. Sp. Grav. at 60°F	Approx. Vap. Press. at 104°F per Sq. In. Gauge	Approx. Temp. at Which Salt Begins to Crystallize °F
NITRANA®									
2	41.0	22.2	65.0	—	12.8	10.8	1.137	10	21
2M	44.0	23.8	69.8	—	6.4	10.8	1.147	18	15
3	41.0	26.3	55.5	—	18.2	12.8	1.079	17	-25
3M	44.0	28.0	60.0	—	12.0	12.7	1.083	25	-36
3MC	47.0	29.7	64.5	—	5.8	12.6	1.089	34	-30
4	37.0	16.6	66.8	—	16.6	8.9	1.184	1	56
4M	41.0	19.0	72.5	—	8.5	9.2	1.194	7	61
6	49.0	34.0	60.0	—	6.0	13.9	1.050	48	-52
7	45.0	25.3	69.2	—	5.5	11.2	1.134	22	1
URANA®									
6C	43.0	20.0	68.0	6.0	6.0	9.3	1.180	12	39
6M	44.0	22.0	66.0	6.0	6.0	10.0	1.158	17	14
10	44.4	24.5	56.0	10.0	9.5	11.0	1.114	22	-15
11	41.0	19.0	58.0	11.0	12.0	9.2	1.162	10	7
12	44.4	26.0	50.0	12.0	12.0	11.7	1.087	25	- 7
13	49.0	33.0	45.1	13.0	8.9	13.5	1.033	51	-17
15	44.0	28.0	40.0	15.0	17.0	12.7	1.052	29	1
U-A-S®									
A	45.4	36.8	—	32.5	30.7	16.2	0.932	57	16
B	45.3	30.6	—	43.1	26.3	13.5	0.978	48	46
Anhydrous Ammonia	82.2	99.9	—	—	—	24.3	0.618	211	-108

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WHAT'S AHEAD IN AGRICULTURE?

All around the world people are suffering from the maladjustment of agriculture, due either to ignorance or the interplay of politics or the cowardice of leaders to tell their people the facts of life on the farm. Here is an analysis of the situation we face today, with millions hungry for lack of sound farming on the one hand, and other millions slowly fading out of the farm picture because modern agricultural methods have forced them over the line of profit and into the red. It is worth while for all of us to stop on this January 1960, and consider what we might do to help the situation. Surely if anyone should think about it, the fertilizer industry's leaders head the list.—Ed.

DOMESTIC

If nothing else, what's ahead in agriculture for the immediate future is a lot of talk, pulling this way and that, about the right thing to do for the man on the farm. It is a major political issue—so major that Life magazine devoted multiple pages to the subject in three successive issues. And when, in the final installment, they quoted leading candidates, the confusion was complete.

As we have said in Commercial Fertilizer Magazine, there needs to be a decision: Is farming a business or a way of life? And the answer to that could resolve many problems —provided our Solons have the guts to do what is indicated.

The more we know about farming, the less money the small farmer makes. New methods make larger crops, and larger crops make smaller unit profits—and the marginal farmer, who makes fewer units, makes fewer profits. It is as simple as that, stated coldly.

The more we know about farming, the fewer farmers we need, because it takes no more manpower, or even machine-power to cultivate the traditional two blades of grass that grow where only one grew before. Result, the figure of people leaving the land each year is getting close to the million mark.

A humanitarian will grieve over this. An economist will approve. For the stronger the farm, the better the equipment, the lower the cost per unit, the better the chance of a profit.

All this has become evident since the days of plowing under every third row, and killing off the little pigs . . . **These were the years when—between wars— the farmers produced too much of practically everything,** and there resulted the quite humanitarian—but poor economics—idea of subsidizing the farmer's surplus in one way or another. This idea has produced a cost to the taxpayers which in 1959 reached nearly three Billion dollars.

It has also resulted in running farm income down 15% below the 1958 figure, while wages in industry have climbed in that same twelve months. While it is not good for the farmers, and has not been good for the farmers since the idea was put into effect. Not to mention the good of the consumer and the taxpayer.

All this can be laid at the door of the politics that made it possible, **and of the marginal farmer who refuses to recognize his true position** These days there is no such thing, really, as marginal land. You can make the desert to bloom, if you choose to use the many management methods which science has dreamed up. And **there is no longer any excuse for depleted land,** except the poverty of the owner who cannot or will not finance a rehabilitation program, which even crusty bankers are now willing to underwrite.

So it seems logical to predict, on the domestic scene, that—despite politics—**the marginal farmer will vanish from the scene.** The business farmer will increasingly take his place, and the sales of fertilizer and mechanized equipment will grow nicely. And because **there will be less selling cost** and **less credit loss,** the operation of both hand-maidens to agriculture will be **more profitable.**

And it seems logical to predict that as farm owners grow fewer, more self-reliant and smaller as a voting bloc, politics will turn to other gimmicks to demonstrate with and with which to get front page space in the papers.

FOREIGN

There are two things that show the way the wind is blowing: **1. The battle over birth control. 2. The little items in our "Around the Map" department which show multi-millions going into fertilizer plants in once-backward areas.** This is not to say that there are no hungry millions any more. There are. But there is hope for them, at least.

There is need for these huge fertilizer plants in the under-developed regions of the World. These people multiply fast. Every day sees more hungry mouths to be fed. **And fertilizer is not the whole answer.**

We must have farm management know-how before the fertilizer gets to work properly. And this is a slow process, as is all education. Human beings are inherently conservative. And **those who till the soil are so conservative as to be downright reactionary.** They can see it is nice to have big factories, but the production principles there, which apply equally to land, are not so eagerly welcomed.

So the process is slow.

Fact is, the process is so slow that FAO, the Food and Agriculture Organization of United Nations at their annual meeting in November made hunger the major subject on the agenda. So much so that they could visualize a time when the power of the soil to grow food would have been outdistanced by the population growth—and starvation would do what in the past has been done by war and disease.

1,700,000,000 people, they said, are today living without sufficient food, shelter, clothing and health facilities. And an explosion might well result when these rise to demand equality as humans with the rest of us. Only a third of the world's food is produced in areas where two-thirds of the world population now live,—and in some of these the per capita farm production is slip-

ping. Asia's production, for example, is 10% lower than it was before World War II, and in Latin America it is 6% lower. On the other hand, they reported, world production over-all is running about 2% ahead of the population rise.

The answer to mass hunger, promulgated by Toynbee at the Rome meeting was birth control. But others pointed out that this is a difficult thing to promote, and not exactly popular with the individuals involved. So they came around finally to the basic principle we have already discussed here — **the need to spread knowledge of advanced farming methods.** And they agreed with what we have already said—it will take many years to establish such knowledge.

So when you come right down to it, the FAO is pulling and hauling, just as our politicians are. The problem is one which goes very deep into the reluctance of peoples to sacrifice for their own good, and **the timidity of the leaders who should tell their constituents frankly that this is the only way out.**

And what is true of the underdeveloped nations is equally true in our own land. **Bravery in the face of public disapproval is a rare type of courage!**

What's ahead in agriculture? A long, slow-moving fight to get things on an even keel—world wide.

TOO MUCH RESEARCH? NO! NOT ENOUGH!!

Florida's Spuds Johnson says: "Every once in a while people say we don't need agricultural research any longer . . . our farmers are producing an almost embarrassing plenty right now. But we have to look to the future . . . " And he is backed up by the experience of industry, as exemplified by the president of General Telephone & Electronics.

"The company that stints on research these days" says Don Mitchell, "will give some short-term gain to its profit-and-loss statement, but it won't have any profit statement to worry about by 1970." And Mr. Mitchell should know: his GT&E gets out of each $100 spent in research from $2500 to $5000 over a 25 year period.

To broaden the picture, the Operations Research Society of America, which thinks deeply about such matters, learned that research budgets are slightly affected by variations in the profit position of industry. This had been accepted as a rule of thumb. It is now proven by a study of 41 large and prosperous companies, of which more than a third are in the chemical processing field. Of this third, only 3 had rates of increase for research which were below rate of increase of sales. And excess profits taxes had no visible relationship to the research and development budget.

Now back to Spuds Johnson:

Exploding Population Means More Farm Research

Every once in a while we hear people say that we don't need agricultural research any longer—that we are already producing too much —that our farmers already have access to more technical knowhow than they need in this area.

Our farmers are producing an almost embarrassing plenty right now. But we have to look to the future —things won't always be the same. The question is: what will we expect our farmers to produce in 15— or 50—years?

Farmers face a huge task. Our population passed 177 million last year. We may have as many as 230 million people by 1975, perhaps even more. So farmers will have to produce an average of 35 to 45 percent more to meet the needs of 1975.

They can do it, of course. But what will it cost in natural resources and in labor and capital? How can it be best done?

We could bring more land into production. But there is not very much good new land available. It will probably be more economic to get these gains from wider application of present technology and further research advances.

In 1956, we met our needs with 506 million acres of cropland equivalent (that's total acreage in crops, plus cropland-equivalent acreage in less productive pasture). In terms of 1956 yields and practices, we will need 714 million acres to meet the needs of 1975—an increase of 208 million acres.

Only about 25 million of those acres are likely to come from developing new cropland through drainage, clearing woodland, irrigation, and improving ranges. The big share will come from putting present knowledge to use—this will give increases equal to the production from 160 million acres. New techniques, from research of the next 5 years, should provide increases equivalent to the output of the other 23 million acres.

This means we must devise improvements 30 percent faster than we did during the fruitful 20 years preceding 1956.

So there is a big job ahead between now and 1975 in agriculture. But it seems there is an even bigger job beyond that time.

The Census Bureau estimates that by the year 2010 we may have 370 million people—more than double our present population. More than a billion acres of land would be needed in terms of today's production methods. Our present goal is to develop a technology equivalent to 400 million acres of additional land.

To do that will require improvements in farm practices at a rate 160 percent as great as in the last two decades.

This calls for strengthening our agricultural research at every stage —from refining new techniques almost ready for release to pushing fundamental studies of natural phenomena.

Morrow Plots Prove You Can Beat Drought

Dry weather and varied soil treatments produced some surprising results this year on the University of Illinois Morrow Plots where corn yields ranged from 26 bushels to 95 bushels per acre.

On one plot that has grown corn continuously since 1876 without any treatment, the yield averaged 26 bushels an acre compared with 31 bushels in 1958.

This year's yield dropped most on a continuous plot that had received no soil treatment from 1874 until 1955 but has had a complete lime, nitrogen, phosphorus and potassium treatment since then. This plot dropped from a yield of 130 bushels per acre last year to only 56 bushels this year.

Agronomists A. L. Lang and L. B. Miller, who are in charge of the

nation's oldest experimental plots, explain that the soil on this plot had no plant food nutrients or organic matter added for 79 years and the soil was allowed to become seriously depleted.

With heavy fertilizer treatments during the last four years, along with favorable rainfall, yield averaged 109 bushels. This compares with an average of 34 bushels for the no-treatment plot.

Dry weather in 1959 provided the real test for this new phase of the long-time continuous corn study, Miller and Lang assert. Even though the soil had plenty of nutrients, it did not have the water-holding capacity to supply corn during a severe drought.

On the other hand, they continue, another continuous corn plot receiving a lime-manure phosphate treatment since 1904 produced 84 bushels an acre.

This was only 1½ bushels less than in 1958 and only 5 bushels below the 1955-58 average. Even though this plot has grown corn every year it has had good management. The soil had a reserve of organic matter and high water-holding capacity. Yields climbed to 95 bushels on a plot receiving continuous manure-lime-phosphate treatment since 1904 and extra nitrogen-phosphate-potash fertilizer since 1955.

"The major lesson from the 1959 experience is that, where soils have a history of good soil management that maintains and builds up organic matter, yields will suffer the least during extremely dry years," say the two university agronomists.

Results were similar for corn yields in the corn-oat rotation plots.

Trees Respond To Plant Food

"Experiments in field trials have spectacularly demonstrated the response of trees to the application of certain inorganic nutrients." This was a statement made by Dr. H. A. Fowells of the U. S. Forest Service, Washington, D. C., who was addressing the Division of Silviculture meeting held during the Society of American Foresters annual meeting in San Francisco.

Among the dramatic examples of response to chemical fertilizers cited by Dr. Fowells was a study by Heiberg and White in 1951 in which red and white pines and Norway and white spruce deficient in potash were treated with the proper fertilizer at the rate of 200 pounds per acre. "After treatment the annual height growth of the fertilized trees was 46% to 104% greater than that of unfertilized trees, and response continued for a number of years," he said. He also gave examples which show greater seed production as resulting from better nutrition.

Delay Fertilization Of Southern Pine

To reduce the danger of burning, leaching losses and competition from weeds, fertilization of slash pine plantations should be delayed at least one year after transplanting, according to Dr. W. L. Pritchett, with the Florida Agricultural Experiment Station.

In a report to the Soil Science Society of America, Dr. Pritchett says concentrations exceeding the equivalent of 150 parts per million of soluble nitrogen or potash may result in reduced growth and stand of newly planted pine on sandy soil.

The Experiment Station has cooperated in establishing some 30 fertilizer experiments on slash pine. Although significant increases in tree growth following the application of fertilizer materials have been reported from several other countries, few consistent increases have been reported from the use of commercial fertilizers on Southern pine.

Dr. Pritchett says it is probable that more consistent response to fertilizers will be obtained when refined techniques are adopted.

Heat Blower Makes Plants Grow Better

A simple device to get redistribution of artificial heat in a plastic greenhouse increased temperature at the "crop surface" and caused much better growth at the Kentucky Agricultural Experiment Station last season.

E. M. Emmert, horticulturist, said he had noticed that in the greenhouse the artificial heat (gas burner-furnished) was collecting at the peak of the roof.

To recapture this heat — which otherwise would have been lost or wasted—Emmert ran a vertical 6-inch pipe about the middle of the house. At the bottom he attached a "T" outlet just above the crop surface. Then he attached a blower to the vertical pipe which sucked the heat from the roof peak down through the vertical pipe and blew it out the "T." One fan to every 40 to 60 feet seems sufficient.

Emmert said the cost of the pipe, fan, and "T" were nominal and more than paid for in the heat savings. The blower circulated warmed air throughout the greenhouse, making the heat levels more consistent.

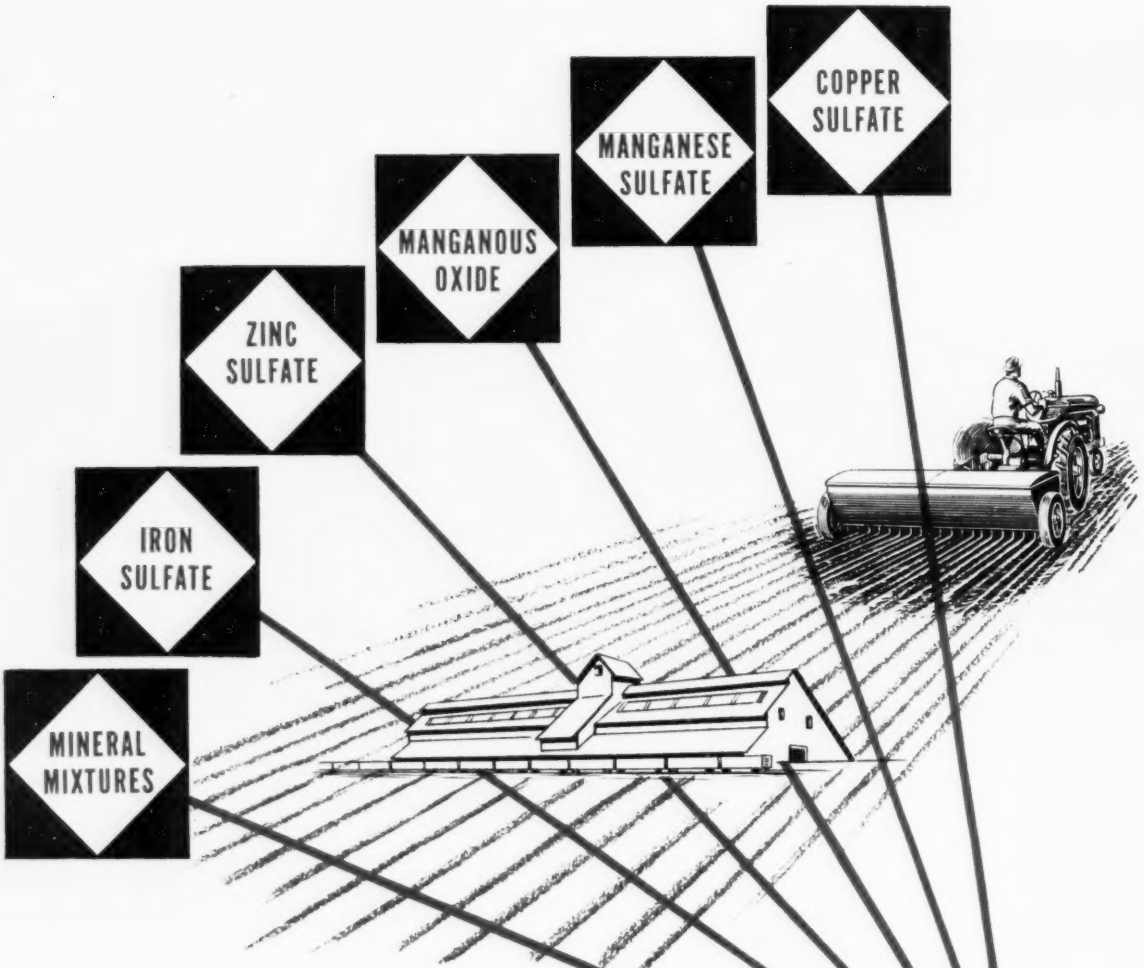
BOOKS

Efficient use of fertilizers, published by the Food and Agriculture Organization of the UN. 356 Pages, 43 Illustrations. Price $4.50. US sales agents: Columbia University Press, 2960 Broadway, New York 27.

This is a manual for the agricultural planner, the extension worker —for all advisers, teachers working with farmers and farm organizations. First published in 1949, and much new material has been included in this edition, which should enjoy a gool acceptance in the fertilizer industry. Ninety-six soil and crop specialists in 34 countries have pooled their knowledge and experience to create this volume.

Chemical Industry Facts Book, 4th edition, published by the Manufacturing Chemists Association, 1825 Connecticut Ave. N.W., Washington 9, D. C. 163 Pages; illustrated with many charts. Single copy price $1.25. This is a document on the chemical industry, of which fertilizers are, of course, a part . . . it's history, what it produces . . . its importance in the economy . . . its future. How the industry operates in various fields, including a chapter on agriculture. Chemicals in the service of man. How the association works, trade organizations and societies concerned with chemicals. Selected bibliography. A glossary of common chemical terms.

How fertilizer dealers affect fertilizer use, published by University of California, Davis, Department of Education. 18 pages. Available from the University of NPFI. This compact report is the result of a study among both small and large-scale farmers, done by personal interview —and starting with the premise that the farmer was sold on the use of fertilizer. The findings are that farmers in general do not know what they should about kind, amount, placement and time of application—and ask the dealer for information and are guided by him.



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Cyanamid literally moves mountains of high-grade phosphate ore to ship carloads of Trebo-Phos . . . the triple superphosphate with controlled porosity.

To ship you the highest quality triple superphosphate, Cyanamid's "walking giants" scoop up twenty-four ton bucketfuls of high-grade phosphate ore at the rate of one ton every one and six-tenths seconds. To make one carload of TREBO-PHOS*, approximately 340 tons of ore are mined. This tonnage dwindles as the ore is washed, screened, graded and dried. Much of the remaining is used to make highly concentrated phosphoric acid which, when added to fine rock, makes triple superphosphate. Quality is checked at every stage . . . the result: a triple with controlled porosity.

Its characteristic: ammoniation rates as high as 5% without evolution of ammonia fumes, yet TREBO-PHOS particles will not take on excess amounts of moisture. The finished product is a dry, drillable, well-conditioned fertilizer. American Cyanamid Company, Agricultural Division, New York 20, N. Y. **TREBO-PHOS is American Cyanamid Company's trademark for its triple superphosphate.*

CYANAMID

TREBO-PHOS

TRIPLE SUPERPHOSPHATE

CYANAMID SERVES THE MAN WHO MAKES A BUSINESS OF AGRICULTURE

PEOPLE in the Industry

IMC

International Minerals & Chemical Corporation has announced the appointment of R. J. DeLargey as vice - president, administration, a new position



DeLargey

T. M. Ware, IMC president, said Mr. DeLargey would be directly responsible for the company's industrial relations, purchasing, legal and industrial engineering departments.

Mr. DeLargey comes to IMC from Food Machinery & Chemical Corporation, where he was general manager of the Westvaco Chlor-Alkali Division, with headquarters in New York.

Dr. Donald L. Everhart has joined IMC as Chief Geologist in the mining and exploration department. He comes to IMC after 10 years as chief geologist for the Atomic Energy Commission. Prior to that, he was geologist with the minerals deposit branch of the U. S. Geological Survey for six years.

The plant food division of IMC has announced six personnel changes in sales and production in its Woburn, Mass., and Cincinnati, Ohio, districts according to John D. Zigler, division general manager.

James E. Sovocool has been promoted to district sales manager at Woburn. He succeeds F. R. Witham, who has been named northeast sales manager for specialty products. In Cincinnati, G. James Leonhardt, has been promoted to district sales manager at Cincinnati.

John L. Medberry, assistant superintendent at the IMC fertilizer and sulfuric acid plants at Lockland (suburban Cincinnati), has been promoted to superintendent. He succeeds C. A. Willenbrink, scheduled for retirement in 1960, who will handle special assignments in the Lockland area office.

Robert L. Wright has been named area credit manager for the sales districts at Greeneville and Lockland. William J. Boston, has moved up to assistant superintendent at Lockland.

Langston Bag

T. Raymond Berry, nationally known textile bag manufacturing executive, has been appointed general manager, Langston Bag Company, Memphis, Tennessee, F. B. "Rudy" Langston, president, has announced.

Dixie Chemical

Succeeding the late Leo H. Harvey, N. S. Stokes, has been elected president of Dixie Chemical Corp., with which he has been associated for 26 years, as vice-president since 1943. He is also president of Dixie Nitrogen and Wayne Nitrogen, and is secretary of the N.C. and Va. Plant Food Institute. C. Felix Harvey is now board chairman as well as vice-president and treasurer of Dixie Chemical.

American Potash Institute

Dr. Roger P. Humbert, head of the department of agronomy of the Hawaiian Sugar Planters Association at Honolulu, joined the American Potash Institute as Director of its Western region January 1, according to H. B. Mann, president of the Institute.



McCollam



Humbert

He succeeds M. E. McCollam, a veteran Institute director and one of the few men in the fertilizer industry to have a public school named in his honor. When he retires the last of December, Mr. Mccollam will be completing 31 years service to the potash industry, 24 years of it with the Potash Institute.

An internationally known soil scientist, Dr. Humbert will serve the states of the far West, including California, Oregon, Washington, Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming. He will administer the Institute's various services to the land-grant colleges, official agricultural advisors, and fertilizer representatives. Associated with him will be Forrest S. Fullmer, Institute agronomist of Newport Beach, California, and Grant Braun, Institute agronomist of Portland, Oregon.

He will work out of the Potash Institute's Western Office at 314 First National Bank Bldg., San Jose 13, California.

V-C

Amos M. Schuster has resigned as administrative vice-president of Virginia-Carolina Chemical to become financial vice-president of American Hospital Supply Corp. V-C's vice-president James E. Nall, also resigned, is remaining in Richmond to "put together several small businesses".

AP&CC

Richard J. Hefler, vice president, Finance, of American Potash & Chemical Corporation, has been elected to the company's board of directors, according to an announcement by Peter Colefax, president. He joined AP&CC in 1948.

The election of Mr. Hefler fills the vacancy created by the death of William J. Hutchinson.

Smith-Douglass

Smith-Douglass Company, Inc., has named R. D. Tayloe assistant to the fertilizer division production manager. Mr. Tayloe has had 19 years experience related to fertilizer production, most recently with the Freeport Sulphur Company. He has served as director of technical service for the National Potash Company, and prior to that was with the Davison Chemical Company for 16 years, serving in various fertilizer production capacities.



Evans



Tayloe

James C. Evans has been appointed assistant sales manager to direct sales training and development in the states of Michigan, Ohio and Indiana for the Smith-Douglass Company, Inc., states served by the former Smith Agricultural Chemical Company, which merged with Smith-Douglass in September 1959.

Evans joined Smith-Douglass in 1948. He served as sales manager of the company's Streator, Ill., territory for several years before being transferred to head up a new sales territory in Ohio, where he has headquartered since August 1956.

Ashcraft-Wilkinson

Robert E. Ashcraft was elected executive vice president of Ashcraft-Wilkinson Company, it was announced by George W. McCarty, chairman of the board of directors.



Ashcraft

Mr. Ashcraft has served as vice president of the firm since 1949. He joined the company in 1929, as a salesman in Atlanta, and subsequently served as branch manager of the Wilmington, N. C. and Norfolk, Va. offices, returning to Atlanta in 1955 as regional sales manager.

The company, with general offices in Atlanta, was founded in 1912 by his uncle, the late Lee Ashcraft, and Mell R. Wilkinson, and serves as exclusive sales agents for Duval Sulphur & Potash Company, Escambia Chemical Corporation, also handling other chemicals for agricultural and industrial fields.

Percy Kent Bag

Charles E. Martin, formerly with the IMC potash division, has joined Percy Kent Bag Co. as Chicago district sales manager.

Nitrogen Division

The appointments of C. C. Matthiesen as Midwest sales manager, direct application materials, and John L. Thieman, regional product supervisor, direct application materials for Allied Chemical Corporation's Nitrogen Division were announced by Malcolm E. Hunter, division vice-president in charge of sales.



Matthiesen



Thieman

Mr. Matthiesen has been assistant to the manager of fertilizer materials in New York. As Midwest agricultural sales manager, a newly created position, Mr. Matthiesen will supervise all direct application, fertilizer mixing and feed sales for the Midwest. He will continue to be located at division headquarters in New York.

Mr. Thieman has been in fertilizer sales for Nitrogen Division since 1954. In his new position, he will continue to be located in the division's Indianapolis, Ind. office.

PCA

John W. Hall has been elected to the presidency of Potash Company of America, following the retirement of F. O. Davis. He has been with them for 10 years, vice-president in charge of sales for the last four years. He is a director of the Potash Institute and one of the NPFI executive committee.

The PCA board expressed its appreciation for the long years of loyal and devoted service of Mr. Davis, and their regret that personal reasons caused him to decide to retire. He has agreed, however, to remain available as a consultant.

Rauh

S. J. Martenet, president of E. Rauh & Sons Fertilizer Company, with plants at Indianapolis and Plymouth Indiana and Sylvania, Ohio, announces the election of John J. Weldon as chairman of the board of directors, and the election of three additional vice-presidents: William F. Farley, formerly president of Smith Agricultural Chemical Company, to serve in an administrative and staff capacity. Carl R. Sparks, formerly vice-president and general manager of Buhner Fertilizer Company, to be in charge of agricultural fertilizer sales. Robert C. Liebetrau, production head since 1955, to be in charge of all manufacturing activities.

Chase Bag

Charles S. Wicks has been named manager of the Chase Bag Company manufacturing plant in New Orleans, it was announced by F. H. Ludington, Jr., vice president and treasurer. He succeeds D. H. Denholm, who has resigned to enter business in Alabama.

Mr. Wicks has been chief industrial engineer for Chase, heading the firm's industrial engineering department in St. Louis with which he has been associated since 1953. He joined the Chase Bag Company in 1930.

Velsicol

The appointment of T. W. Brasfield as director of marketing, Velsicol Chemical Corporation, has been announced by John F. Kirk, vice-president. Mr. Brasfield comes to Velsicol from Naugatuck Chemical Division, United States Rubber Company.

In his new position, Mr. Brasfield will be responsible for all of Velsicol's marketing activities in the United States including agricultural and pest control chemicals, resins, solvents, and inorganic chemicals.

IMC

International Minerals & Chemical Corporation has announced the appointment of Fred A. Koechlein as general credit manager of the corporation.



Koechlein

Koechlein, who since July 1 had been manager of planning for the company's phosphate operations, has had 30 years of experience with IMC in the fields of sales, production and purchasing. He will be responsible in his new post for administration of the company's credit policies.

His career with IMC includes 16 years in top management of IMC phosphate mining and processing operations, including positions as general manager, assistant to the division vice president, and assistant sales manager. He was for several years located in the company's Florida offices.

Reading Bone

Donald R. Bucks, formerly with Lancaster Bone Fertilizer and Swift, has become agronomist and product manager for Reading Bone Fertilizer.

US Borax

Appointment of William J. Dibble to the newly-created position of director of marketing for United States Borax & Chemical Corporation is announced by J. F. Corkill, vice president in charge of marketing.



Dibble

Dibble formerly served as executive assistant to Mr. Corkill in the department which handles the sale and distribution of the company's borax and potash products for industry and agriculture.

Mr. Dibble joined U. S. Borax in January, 1955.

Kenneth L. Magnuson has been appointed assistant controller, it is announced by Richard F. Steel, vice president for administration.

Mr. Magnuson has been with U. S. Borax since 1957. Previously, he was associated with Consolidated Electrodynamics Corp., as chief accountant and with Peat, Marwick, Mitchell and Co., Los Angeles, as staff auditor.

HIGH-K

MURIATE OF POTASH for the PLANT FOOD INDUSTRY

THIS symbol stands for high-grade uniform, coarse and granular Muriate of Potash (60% K_2O minimum). Southwest Potash Corporation provides a dependable supply of HIGH-K* Muriate for the plant food industry.

*Trade Mark

Southwest Potash Corporation

AT BROADWAY • NEW YORK 6, N. Y.

Safety Council

Marshall E. Petersen has been named staff representative of two industrial department sections of the National Safety Council.



Petersen

He will be staff engineer for the Council's meat packing, tanning and leather products section and the fertilizer section. He also will be consultant fire protection engineer for the department.

Before coming to the Council, Mr. Petersen was a traffic safety engineer with the Cook County (Ill.) Highway Dept. and with the Illinois Division of Highways; supervisor of safety and fire protection, Allied Chemical Corp.; industrial hygiene engineer, Illinois Department of Labor, and industrial safety engineer, Argonne National Laboratories.

Simonsen

Merle Simonsen, manager of the Simonsen Mfg. Co., Quimby, Iowa, reports that Kay Stevenson has been promoted to head up the regional sales office for his company in Le Sueur, Minnesota.

Increased business in the North Central states, especially in Minnesota, Wisconsin and Northern Iowa, and the need for closer sales and services supervision in this area has made this expansion necessary.

Marietta Concrete

Lee Neff, formerly principal in the firm of Neff and Fry Company, Camden, Ohio, has joined the industrial silo sales representative staff of the Marietta Concrete Division, American-Marietta Co., Marietta, Ohio, it has been announced by F. Leonard Christy, manager.



Neff

In his new association, Mr. Neff will be in charge of Midwest sales, representing the company in an area including Southwestern Ohio, Southern Indiana, Southern Illinois, Kentucky and Tennessee.

Well-known to a great many persons in the silo and storage industry, Mr. Neff will be responsible for developing new markets and uses for Marietta Industrial Silo Storage Systems, as well as expanding present sales.

Bradley & Baker



White



Borg



Forbes



Harper

Thomas J. White has been appointed fertilizer sales manager for Bradley & Baker. Formerly St. Louis area sales manager, Mr. White is now located in the New York office.

Several new appointments have been made in the St. Louis territory: Robert L. Borg has replaced Mr. White as St. Louis area sales manager. Gerald E. Forbes will cover Colorado, Kansas, Missouri, Nebraska and southern Iowa and will move to Kansas City. Robert L. Harper, formerly with Mississippi River Chemical Co., will call on fertilizer manufacturers in Michigan, Ohio and eastern Kentucky and lives in Columbus, Ohio.

Two St. Louis sales representatives have taken over other midwestern territories: William L. Guithues has moved to Minneapolis and is covering North Dakota, South Dakota, Minnesota, Wisconsin and northern Iowa from Minneapolis, and Arthur G. Riddell, Jr., is covering Indiana, Illinois and western Kentucky from West Lafayette, Indiana.

Fischer & Porter

Donald T. Cusack has been named to the position of Eastern regional sales manager by Fischer & Porter Company, Warminster, Pa. In his new position, Mr. Cusack will be responsible for the New England, Eastern New York, and Northern New Jersey Sales Regions. He was formerly district manager of the New York area.

Ralph J. Fittipaldi has been named district sales manager of the New York office. Eugene R. Klotz has been named market development manager for flowmeters. C. Jackson Levis has been named district manager of the Philadelphia sales office.

St. Regis

St. Regis Paper Company has announced the following appointments in its Bag Division:

John T. Walton has been appointed manager of Marketing Services, and is responsible for the planning and administrative functions of the Division. Mr. Walton was formerly manager of domestic licensee relations.

Other Marketing Services appointments include: Donald R. Russell, multiwall product manager; Austin J. Hare, textiles product manager; Lewis H. Merrill, pricing administrator; and Carroll D. McCabe, Jr., marketing measurement administrator.

Alfred A. Roetzer has been named general manager of packaging services for the Division. In this position, he is responsible for coordination with the engineering and machine division in the development of new packaging equipment products. Mr. Roetzer was formerly sales manager of packaging equipment.

Other Packaging Services appointments include: John H. Dively, assistant general manager; Walter D. Wright, Jr., staff engineer; fertilizer packaging; Joseph A. Fioretti, staff engineer, materials handling; Carl W. Olson, staff engineer, sales promotion and training; and Harry D. O'Neal, staff engineer, packer and materials testing.

James Wipper has been named Division comptroller, and is responsible for the administration of the financial policy and co-ordination of accounting procedures of the Division. Mr. Wipper formerly handled manufacturing costs and reports within the comptroller's office.

Bunker Hill

The Bunker Hill Company announced that, prior to appointment of a new president, Emmett G. Solomon, Bunker Hill vice-president and director, will function as interim chief executive officer.

As our readers know (December Obituaries), John D. Bradley, Bunker Hill president, and his wife were killed Thanksgiving night on a San Francisco freeway when their Southbound auto was struck head on by a Northbound car which somersaulted out of control across the dividing strip.

In a letter to stockholders, the board of directors stated that Mr. Solomon had also been named chairman of the executive committee of the board of directors and that direter Ross D. Leisk had been appointed to the executive committee vacancy created by Mr. Bradley's death.

USI

Albert C. Brooks has been named manager of the Baltimore sales division for U. S. Industrial Chemicals Co., division of National Distillers and Chemical Corporation. Alden R. Ludlow, Jr., vice president in charge of sales, announced the appointment. Mr. Brooks succeeds James F. Whitescarver who has retired.



Brooks

Mr. Brooks has been associated with U. S. I. for approximately 25 years, and his varied background of experience in the plant, in the laboratory and in sales make him well qualified to serve customers in the Baltimore Division. He was assistant manager of the Baltimore division when he was given his new assignment.

Mr. Brooks' predecessor, James F. Whitescarver, joined U.S.I. in 1922 and served as Baltimore division manager for many years.

Bemis

H. V. Howes, director of sales for Bemis Bro. Bag Company, St. Louis, has announced the transfer of T. I. B. Gray from the general sales department to the company's packaging service department, Minneapolis, effective January, 1. Mr. Gray, who has been on special assignment, will join the sales department of the packaging machinery unit.



Gray

Mr. Gray joined Bemis in 1949 as a member of the General Engineering Department's Industrial Engineering Section, St. Louis, and was transferred to Seattle in 1951 as assistant to the plant superintendent in charge of plant personnel. He was later made responsible for material procurement and then worked on plastic bag promotion on the West Coast.

He returned to St. Louis in 1955 and was assigned to the company's general personnel department. At packaging service, Mr. Gray will be a member of the Bemis sales group responsible for the sale of a wide range of bag filling, closing and conveying equipment designed, developed and manufactured by Bemis for the bag industry.

You Don't Have To Wear Guns When You Deal With Spencer...



You remember the old story about the guy who ran for sheriff and lost by a landslide. The next morning he showed up on Main Street with two big guns strapped around his middle.

"Why are you wearing guns?" asked an acquaintance. "You didn't win the election."

"That's right," answered the defeated candidate. "But a man with no more friends than I have needs to wear guns."

Leave Your Guns At Home...

When you sell Spencer "Mr. N" Ammonium Nitrate Fertilizer, you don't need to go armed. You don't need to worry about losing friends or customers because of inferior product performance. Also, when you're a distributor for Spencer "Mr. N," you don't have to worry about kicks from dealers because it won't sell.

Spencer "Mr. N" has long been the leading ammonium nitrate fertilizer in the Midwest. Wherever it has been introduced it has sold well. Dealers like to sell it. Farmers like to use it. And when they use it, they get results.

But Spencer doesn't try to convince farmers that nitrogen alone is the answer to all their fertilizer needs. Spencer realizes that farmers need to use mixed fertilizer, too—and constantly reminds farmers of this fact right in "Mr. N" advertising. It's all part of Spencer's desire to help farmers get results. That makes more friends for Spencer and for you—and is another reason you don't have to wear guns when you sell Spencer "Mr. N."

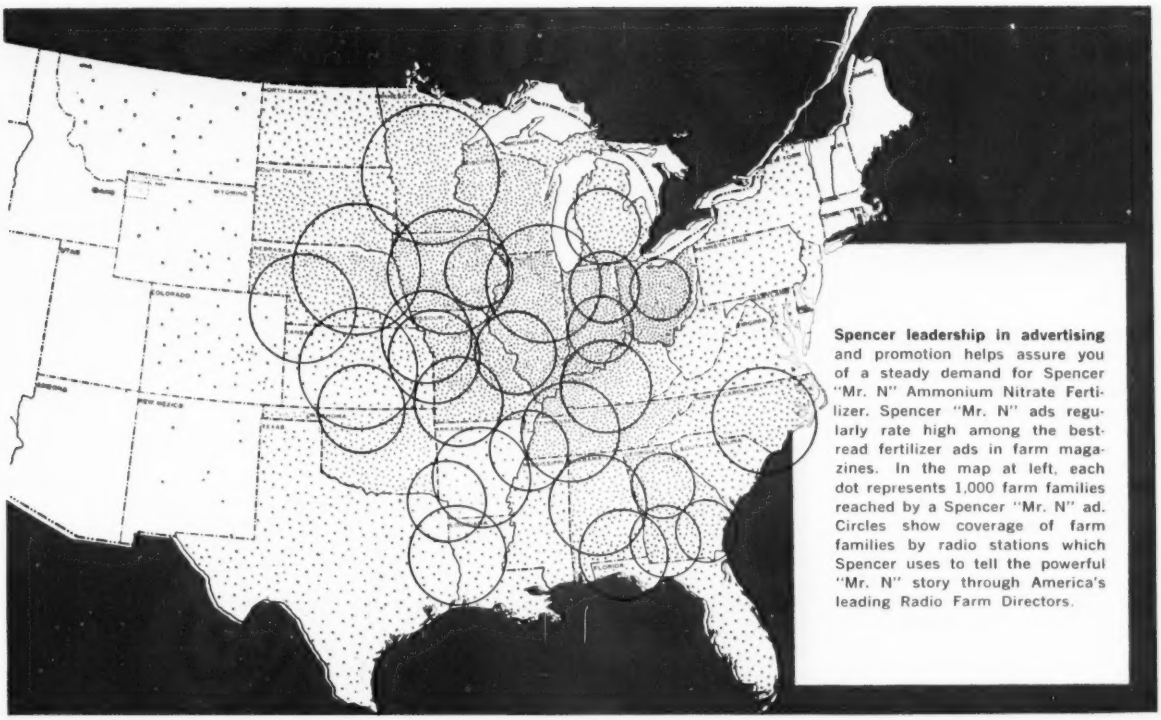
On these pages, you'll find several other good reasons why Spencer is the brand to put your money on.

So look 'em over, amigo . . . and let's do business together!



Spencer leadership in production techniques has resulted in a number of improved nitrogen solutions and several mixing innovations to help you make important savings on production costs and improve your finished products. These include the development of new SPENSOL GREEEN* Nitrogen Solutions (one with an unusually low salt-out temperature, as indicated above), and an improved preneutralization process.

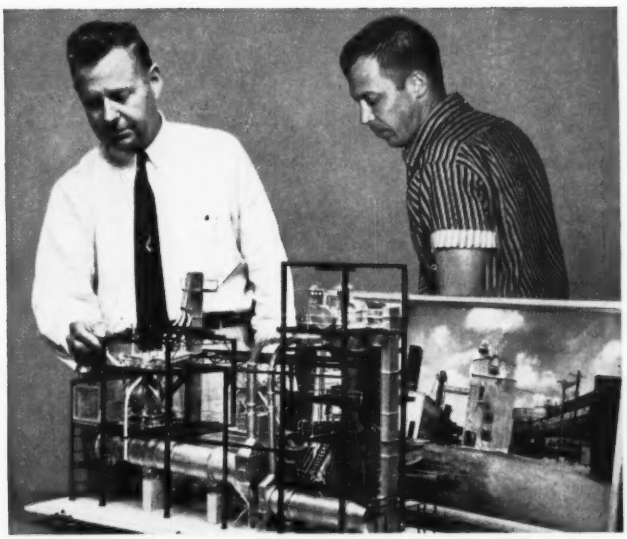
*SPENSOL GREEEN is a registered trademark of Spencer Chemical Company.



Spencer leadership in advertising and promotion helps assure you of a steady demand for Spencer "Mr. N" Ammonium Nitrate Fertilizer. Spencer "Mr. N" ads regularly rate high among the best-read fertilizer ads in farm magazines. In the map at left, each dot represents 1,000 farm families reached by a Spencer "Mr. N" ad. Circles show coverage of farm families by radio stations which Spencer uses to tell the powerful "Mr. N" story through America's leading Radio Farm Directors.



Spencer leadership in packaging means you can sell "Mr. N" with confidence that it will be in good condition. In fact, Spencer guarantees it will flow freely even after a full year's storage under proper conditions.



Spencer leadership in Technical Service assures you of expert assistance in solving problems in engineering, formulation, plant design, granulation, preneutralization and personnel training. A highly trained team of Tech Service specialists stands ready to assist mixers in Spencer's marketing area.

SPENCER®

"Don't just fertilize... Spencerize"

SPENCER CHEMICAL COMPANY, Kansas City, Missouri

Producer of 4 Nitrogen Spencerizers for hungry crops



Extended Life Insurance For Fertilizer Plants And Equipment . . .

Suprene Chemical Resistant Coating has been especially developed for service under severe acid or alkali fumes, moisture vapors and condensates normally found in agricultural and industrial chemical plants. It may be applied to steel, concrete, wood or fabric using brush, roller or dip methods and will air dry in a period of from ½ hour to 2 hours depending upon conditions present at time of application. This coating has unusual adhesion qualities and a flexible tough surface which is highly resistant to corrosion and abrasion.

THE A. J. SACKETT AND SONS COMPANY
SACKETT EQUIPMENT
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Canadian Industries

A number of new appointments in the agricultural chemicals division of Canadian Industries Limited, have been announced by V. B. Lillie, general manager of the division.



Shantz

K. A. Shantz, formerly divisional technical manager, assumes the post of production manager to replace L. V. Clegg who has become the general purchasing agent of C-I-L. H. G. Sewell, formerly Toronto district sales manager, becomes the division sales manager—fertilizers. He is replaced at Toronto by F. P. Smith, formerly assistant Maritimes district sales manager. G. R. Blais, formerly assistant Quebec district sales manager, becomes Chatham, Ont. district sales manager replacing G. B. Ough who has resigned from the company. Mr. Blais is succeeded by H. W. Barrett, formerly sales representative in eastern Ontario. W. E. Denmark becomes manager of the Hamilton works, replacing H. M. Jones who has taken over Mr. Denmark's previous post as manager of C-I-L's West Toronto paint plant.

Ferris

Lockwood W. Ferris, president of Bonneville, Ltd., operators of a solar evaporation potash complex at Wendover, Utah, has resigned and will re-enter the field of consulting metallurgy and chemical engineering at Salt Lake City. His successor has not yet been named.

He served for many years as vice-president and general manager of Bonneville, Ltd., before his election as president and general manager in 1957.

In recent years he was responsible for development of lithium extraction processes, drilling of potash and recovery of magnesium oxides.

Hudson

B. C. Drumm, sales manager of Hudson Pulp & Paper Corporation's Multiwall Division, has announced the appointment of Robert Knight as district manager in Western Missouri, Kansas and Eastern Nebraska.



Knight

Mr. Knight will headquarter in Kansas City. He brings to Hudson extensive executive sales experience in the Multiwall industry and has sold packaging products throughout his career.

obituaries

Stewart G. McKenzie, 57, general superintendent at Hopewell, Va. for Allied Chemical's Nitrogen Division, died there November 28 on the Meadowbrook Country Club golf course.

Dr. Walter J. Murphy, 60, longtime editor of American Chemical Society publications, died November 26 in Washington's Georgetown Hospital after several weeks of illness.

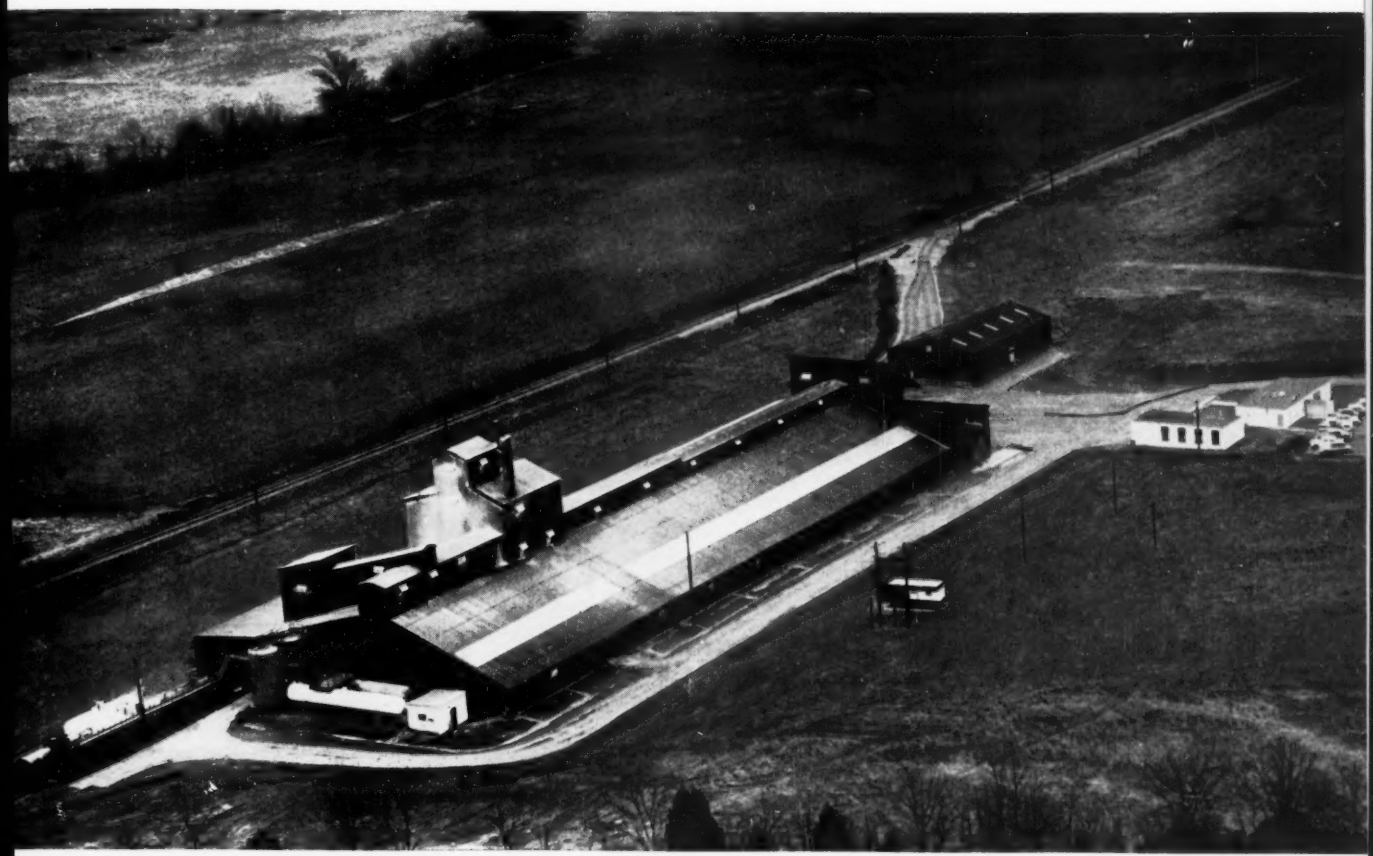
Ernest A. Schueler, 58, former proprietor of the Erie-Niagara Farmers Supply, Buffalo, N. Y., died December 20. He sold the business in 1948 and became a fertilizer manufacturer's representative.

Trenton Tunnell, 59, president of Ashcraft-Wilkinson Company died Dec. 22 in a private hospital at Atlanta, Ga.

Charles G. Ward, 76, retired in 1952 as Northeastern division sales manager for The American Agricultural Chemical Company, which he joined in 1900, died December 31 at his home in Hingham, Mass. Survivors include his son, Steven D. Ward, a division production superintendent for AAC in New York.

Industry Meeting Calendar

DATE	EVENT	LOCATION	CITY
	1960		
Jan. 13-15	Agricultural Ammonia Institute	Statler Hilton Hotel	Dallas, Texas
Feb. 11-12	Midwest Industry-Agronomist Meet	Edgewater Beach Hotel	Chicago, Ill.
June 12-15	National Plant Food Institute	Greenbrier Hotel	White Sul. Spgs., W.Va
July 27-30	Southwest Fertilizer Conference	Galvez Hotel	Galveston, Texas
Oct. 5-6	Southeast Fertilizer Conference	Biltmore Hotel	Atlanta, Ga.
Oct. 17-18	Fertilizer Safety Section	LaSalle Hotel	Chicago, Ill.
Nov. 2-4	Fertilizer 'Round Table'	Mayflower Hotel	Washington, D. C.
Nov. 9-11	National Fertilizer Solutions Assn.	Peabody Hotel	Memphis, Tenn.



A NEW PLANT FOR KENTUCKY . . . A NEW RECORD FOR SACKETT

Here's a brand new granular plant for Kentucky . . . and a remarkable new construction record for The Sackett Company.

Recently completed at Russellville for Cooperative Fertilizer Service of Richmond, this big and fully automated fertilizer manufacturing facility* was built by us in 6 short months.

This is the kind of field performance that Boards of Directors and top management people are looking for . . . the kind they are finding in Sackett . . . *and at the right price, too!*

*Including offices, service buildings and rail sidings

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America's Foremost Creative Designers and Builders . . .

- COMMERCIAL FERTILIZER PLANTS
- SUPERPHOSPHATE PLANTS
- RELATED PRODUCTION EQUIPMENT

SEE SACKETT PRODUCTS IN CHEMICAL ENGINEERING CATALOG



CALIFORNIA

Stauffer Chemical's new plant at Richmond, which is to replace the Berkeley plant, will double the Richmond capacity. This plant produces sulphuric acid, superphosphate and mixed fertilizers.

* * *

Hercules Powder has announced plans for a multimillion dollar expansion of its West Coast facilities at Hercules. The expansion includes new manufacturing facilities for the production of methanol, formaldehyde, urea-formaldehyde concentrates, and slow nitrogen release urea-form for fertilizer applications.

John M. Martin, general manager of Hercules explosives department, said that construction of the new facilities for producing the urea-formaldehyde compositions would be completed by mid 1960, with methanol-formaldehyde facilities completed in early 1961. The new construction will include facilities for 11,0000 tons of urea-formaldehyde compositions.

* * *

Arizona Fertilizer & Chemical Co., Phoenix, Arizona, has purchased **Arical Chemical Co.,** Blythe, a producer of dry and liquid insecticides and fertilizer blends.

Frank M. Feffer, president of Arizona Fertilizer, said the acquisition was the first in a planned expansion program.

DELAWARE

American Liquid Fertilizer Corp. has filed for incorporation in Delaware with $1,000,000 authorized capital stock.

* * *

Canadian Pacific Sulphur Co. Ltd. has also filed in Dover, with $200,000 capital stock.

GEORGIA

Omega Fertilizer Works has had to move from Omega to Tifton, because the railroad went off and left them. The nine-mile move involves only production, with bagging remaining in Omega. The plant in Tifton will be ready about the first of next month, and will include two major buildings: a plant food unit 108 x 225 feet, and a bag storage plant large enough to store 10,000 tons. Two-way radio will keep the two centers in touch at all times.

IDAHO

Central Farmers have shut down the mining operations at Georgetown for the winter months, except for 60 men who will continue stripping preparations for next season's operations.

KENTUCKY

E'town Fertilizer Co., Elizabethtown, are adding to their plant for the fourth time in five years. This project, which is now due for completion, will double capacity.

* * *

Acme Fertilizer Co., Glasgow, has been incorporated for $1,000,000 by L. Rogers Wells Sr. & Jr. and Richard L. Garnett.

MISSOURI

McQuerter Chemical Co. Mt. Vernon, is building a $200,000 plant to serve the surrounding 22 counties. Loryn E. McQuerter is principal stockholder, president and manager. The plant, being built by Longhorn Construction, will be capable of 25,000 annual tons and should be ready in time for the new season.

NEW MEXICO

New Mexico Feed & Fertilizer Albuquerque has incorporated listing $250,000 capitalization. They have been established for some time, and manufacture fertilizer.

N. CAROLINA

Virginia-Carolina Chemical Corporation has acquired the **Reliance Guano Co.** fertilizer plant at Whitesville from **Southern States Phosphate and Fertilizer Co.,** Savannah, Ga. **Quentin W. Hodges** continues in charge of the operation.

* * *

Wilmington Fertilizer expect to complete this month the plant at Hilton which replaces the building gutted by fire.

NORTH DAKOTA

LaMoure Chemical & Fertilizer Co. has filed for incorporation with LaMoure headquarters, and Robert L. and Janet Nelson and Charles V. Henderson as incorporators. $10,000.

PENNSYLVANIA

Pittsburgh Coke & Chemical is expanding its Neville Island sulphuric acid plant capacity by 70 per cent, according to W. K. Menke, vice president—chemical divisions.

Construction is underway on the new facility which will embody the latest improvements in sulphuric acid plant design, and its completion is scheduled for early 1960.

The acid is used here for pickling and cleaning metals, for processing coal chemicals from coke oven gas systems, and in the manufacture of chemicals. It is vital, directly or indirectly, to practically every important industrial process.

Besides placing the company in a position to offer significant quantities of sulfuric acid to industries in the Pittsburgh area, Mr. Menke said, the new plant is designed to supply the substantial requirement of Pittsburgh Coke in processing chemicals from the gas system of its own coke ovens.

He noted that the Neville Island plant location allows the company use of the natural advantages of water transport for its acid shipments by barge, as well as by truck or rail.

* * *

Summers Fertilizer Company, Inc., Baltimore, Maryland, has announced acquisition of the A. D. Graham & Company's mixed fertilizer and farm supply business established in 1928 at Somerset. The facilities at Somerset will be used also as the new home for Summers' Kapco Division which had outgrown the capacity of the McKeesport, Pennsylvania plant. This latter property has been sold to a distributor of petroleum products.

The new owners will continue the Somerset operations as the Graham Division of The Summers Fertilizer Company, Inc., according to James E. Totman, president. A. D. Graham will not be associated with the business after January 1, 1960, but all other personnel will be retained.

TEXAS

Swift & Co. and Monsanto are included in the guesses being made around Houston. It seems there is to be a $15,000,000 fertilizer plant there. It seems that the option money is down on a large site. It seems that a New York firm has completed engineering plans. It seems attorneys are hard at it, clearing titles. It seems the plant is a certainty.

But nobody seems to know for sure whose plant it is to be.

* * *

DuPont has announced a sulphuric acid plant, to be located at its La Porte plant. It is to be "one of DuPont's largest sulphuric acid plants" but no announcement has been made of capacity or cost. In fact, these items have been "withheld for competitive reasons."

UTAH

Armour is said to be negotiating with **Delhi-Taylor** toward a joint, multi-million potash operation. If this goes through the Armour people will be the first company with all three —NPK— basic materials.

* * *

San Francisco Chemical recently took up their options on Brush Creek potash lands which contain an estimated 700,000,000 tons of medium grade ore, most of which can be stripped. Scotty King says the surface deposits alone are enough to last the operation for two hundred years.

BELGIUM

Produits Chimiques de Tessenderloo, Brussels, are planning an $800,000 investment in new plant and equipment (to be paid for out of a single year's profit) to meet the increased demand they see ahead.

CANADA

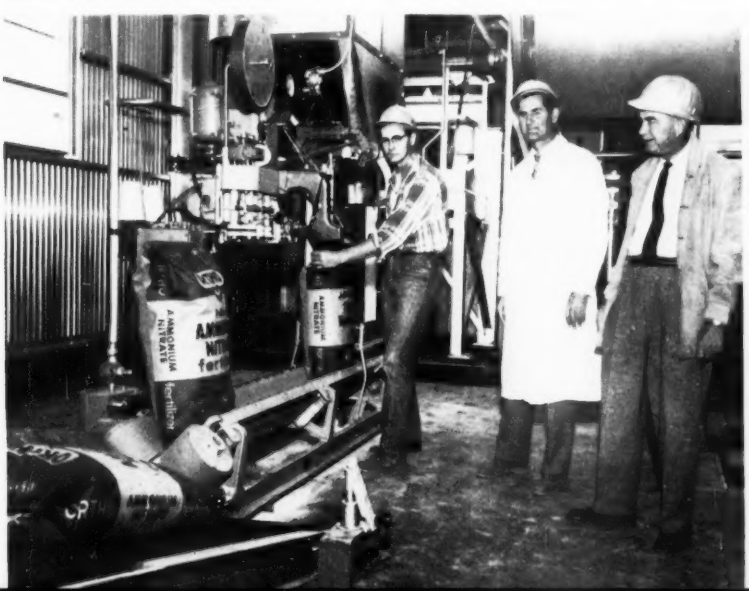
Brockville Chemicals Ltd, Maitland, Ont., a new company, is about to undertake public financing of $17,000,000 for a plant to produce ammonium nitrate, nitrogen solutions, anhydrous ammonia and hydrogen. The Maitland Works of DuPont will supply the anhydrous ammonia and hydrogen by pipeline; the plant will use Alberta natural gas; will employ 185; will be completed early in 1961. The operation is part of the Sogemines group.

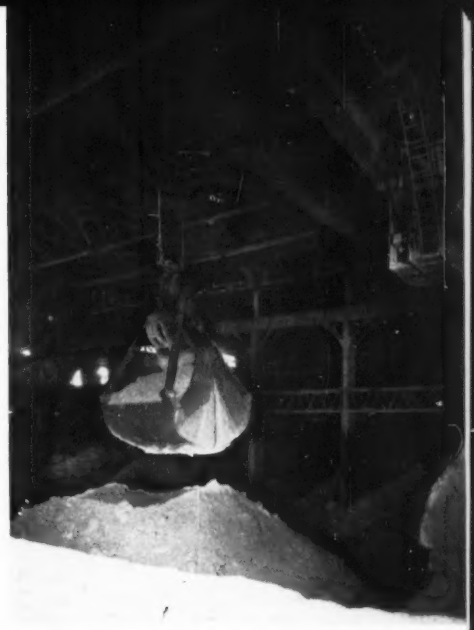
* * *

Texas Gulf Sulphur and International Nickel of Canada have announced "encouraging results" in the initial eight-months operation of a pilot plant for obtaining pure sulphur from sulphur dioxide in the high quality roaster off-gas at Inco's large iron ore recovery operation in the Sudbury District of Ontario.

The plant was completed last year and, with associated facilities, cost over $500,000. Initial operations consisted of test runs. However, since last April, operations have been around-the-clock and will be continued on this basis in an attempt to successfully conclude the development program.

The $5,000,000 fertilizer plant now being built at Kennewick, Washington, by the California Spray-Chemical Corporation of Richmond, California, to manufacture a complete line of liquid and dry fertilizers for the Pacific Northwest and Inter-Mountain agricultural market has begun second-phase operation to keep on schedule with "onstream" production planning, according to company officials. The new plant's nitric acid and ammonium nitrate units are already "on-stream," producing fertilizers, and the production of Cal-Spray's "Ortho" complex, high analysis, pelleted fertilizers is expected to be up to full capacity by mid-February. The most modern manufacturing and processing units are being installed for the manufacture of the complex fertilizers. When running at full capacity, the plant will have between 80 and 100 full-time employes.
Shown here with bagging equipment that will fill twenty 80-pound bags a minute are Frank Krul, bagging and sewing operator; Cal Dorough, Kennewick plant manager, and P. S. Williams, vice-president of Cal-Spray.





Difficult-to-penetrate fertilizers are handled easily by this 2-line, lever arm type bucket and two other similar units at the South Norfolk, Va., plant of Swift & Company. The buckets—made by Blaw-Knox Company, Blawnox, Pa.—play a vital role in the plant material handling system, moving all types of mixed plant foods of medium and high analysis grades. Two of the clamshell units are in constant use while a third one is on standby.

COSTA RICA

International Development & Investment is part of a group advised by Dillon Reed which plans to build in Costa Rica a $7,000,000 fertilizer plant which would be capable of expansion to a $20,000,000 facility.

EIRE

Shamrock Fertilizers have opened their new $560,000 phosphate plant on the North Quay of Wicklow Town, with a production capacity of 60,000 annual tons.

ENGLAND

Fisons have formed a new subsidiary which will handle the horticultural sales of fertilizer, and is named Fisons Horticulture.

INDIA

Neyveli Lignite Corp. has commissioned a $21,000,000 contract with Montecatini and Ansaldo for the construction of the urea plant for Neyveli which is part of the government's second five-year plan. A fertilizer project for Andhra Pradesh is part of the next plan, but preliminary work will be done as part of the current plan. Another Assam project is virtually ready for preliminary work, under the same conditions. Together with other projects under way, the third plan should find a fertilizer plant in every State except Jammu and Kashmir.

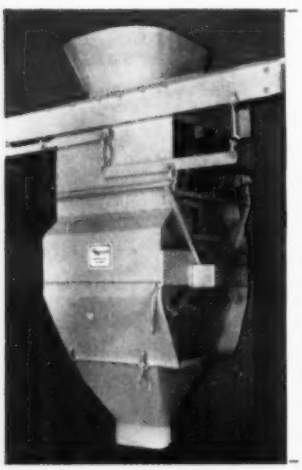
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BAG CORPORATION
A division of Albemarle Paper Mfg. Co.
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Fleming Casebeer will continue as manager of the field fertilizer, seed, and farm supply business.

Howard Miller, Summers' Kapco division manager for the past several years, will continue as manager of Kapco at Somerset and will be Summers' senior representative at this location.

IRAN

The Government has let contracts for the construction of the plant at Shiraz, which will be a nitrogen complex. ENSA of France is general contractor. Foster Wheeler Francaise is in charge of general engineering. SBA of Belgium has been awarded the design of the nitric acid and ammonium nitrate units, and has granted a license to use its techniques.

MALAYA

Standard Vacuum has decided to establish a refinery and fertilizer plant at Kaula Lumpur as part of its $30,000,000 investment program in Malaya. The fertilizer plant will be set up in association with the Wah Chang Corp. of New York.

PERU

Fertilizantes Sinteticos which, as our readers know, is about to go into production with the $12,800,000 plant at Callao which is Monsanto-sponsored. It will have a capacity (instead of the tonnage originally reported) of 54,000 annual metric tons of nitric acid; 20,000 of anhydrous ammonia; 35,000 of ammonium nitrate; 7,000 of ammonium sulphate.

SPAIN

The Calvo Sotelo complex, state owned, has started production of its 80,000 annual ton nitrogenous fertilizer facilities. Ultimately other petrochemical units will be added. Spain imported more than a million tons last year, and this new facility is expected to reduce that figure materially.

SOUTH AFRICA

African Explosives and Chemical Industries expects to be in production by June with its $28,000,000 nitrogen plant in the Transvall. It will turn out 110,000 annual tons of urea—and will make South Africa independent of imported N. They will also build at Modderfontein a 10,000 ton Methanol-Formaldehyde-Urea Formaldehyde plant.

Final panel on 1959

Fertilizer Industry Round Table:

Preneutralization

The panel discussion of 'Preneutralization' at the Fertilizer Industry Round Table—the meeting reported to our readers last month—was one of the highlights of the program, and was saved for the 'anchor' position on the final day's session.

Phil Stone of Virginia-Carolina Chemical Corp. led off the discussion, expanding on the report given at the 1958 Round Table by V-C's Charlie Floyd. His remarks were initially related to production of 14-0-14 goods, with 10 units of N derived from solution, using a 25% recycle rate. This product is dried, cooled, coated and bagged without being held in bulk storage, Mr. Stone said.

The procedure of allowing the hot reaction liquor to overflow the lip of a trough into the mixer has been modified now, he said, because frequent cleaning of the trough lip was found necessary; present practice is to discharge the liquor through eight ½-inch orifices spaced six inches apart in the bottom of the trough. The trough was described by Mr. Stone as being a 6-inch steel pipe cut in half, and he said present plans are to extend the length of this device to provide room for 16 orifices.

Preneutralization tanks and nitrogen solutions spargers of 316 steel have proved satisfactory, he said, but the acid spargers—initially 316 steel also—have more recently been made from Hastelloy C. The V-C specifications originally used an 18" x 18" marine plywood stack with a fan for removal of water vapor, Mr. Stone stated, but the fan has now been found unnecesary.

Formulations are generally dried down to ½ of one percent moisture content to avoid caking, then coated at the cooler discharge with 20 pounds or more of conditioner per ton, he said, and their experience has indicated that a kaolin clay avoids dusting problems very well.

Grant Marburger of Spencer Chemical Company cited the benefits of reduced moisture content and prevention of overgranulation by use of preneutralizers, especially on 1:1:1, 2:1:1, 3:2:2 and inverse ratio grades. Much depends on the economics of location and raw materials, he said, pointing particularly at the cost spread of solid vs. liquid nitrogen and of phosphates, and cost of sulfuric acid; location alone can vary the cost of a single formulation by 90¢ to $3.47 a ton, he stated. As side benefits of preneutralization, he mentioned that recycles are needed less for control of overagglomeration, there is less fuming, and nitrogen losses are usually lower.

Production experience indicates that preneutralizers are simple and easy to operate by plant personnel, Mr. Marburger said, but pH tests—simply removal and check of a dipperful of slurry by the operator—are very desirable. Operators can easily control the temperature with water, he said, but some installations have run into problems with mixing, surging, splashing and violent reaction in the preneutralizer. The latter two are generally encountered only in small tanks, Mr. Marburger concluded, and evaporative water loading and ammonia reaction loading decrease as the tank diameter increases.

Frank Keenen of du Pont stated that the preneutralizer offers definite possibilities. Confining his comments principally to use of urea-ammonia-water-carbon dioxide solutions, he said that the amount of water boil-off and the amount of slurry that can be tolerated will play a big part in a decision to preneutralize. Urea hydrolysis is not excessive even at temperatures up to 250° F., he revealed, in a reasonably short processing time. However, it is hard to carry experience from one plant to another, Mr. Keenen stated, and preneutralizers have the effect of adding another variable to the process. He described the use of an eductor jet sparger, and related the effects of the CO_2 in solutions. With use of 60° Baume acid water is generally not needed to control the reaction, Mr. Keenen said.

Arthur Henson of The American Agricultural Chemical Company told about the pilot plant production of water-soluble 17-17-17 and granular 18-18-18. Control of pH is important, he emphasized, using slide projections to illustrate the AAC process where materials are fed from a ribbon mixer into an ammoniator, then to a pugmill where the sulfate and phosphate pre-melts are introduced. A cut-flight screw conveyor is used for agitation in the preneutralization, he explained, and said that the most troublesome part of the operation is start-up and shut-down, but stated that application of water and heat during the shut-down might minimize these troubles.

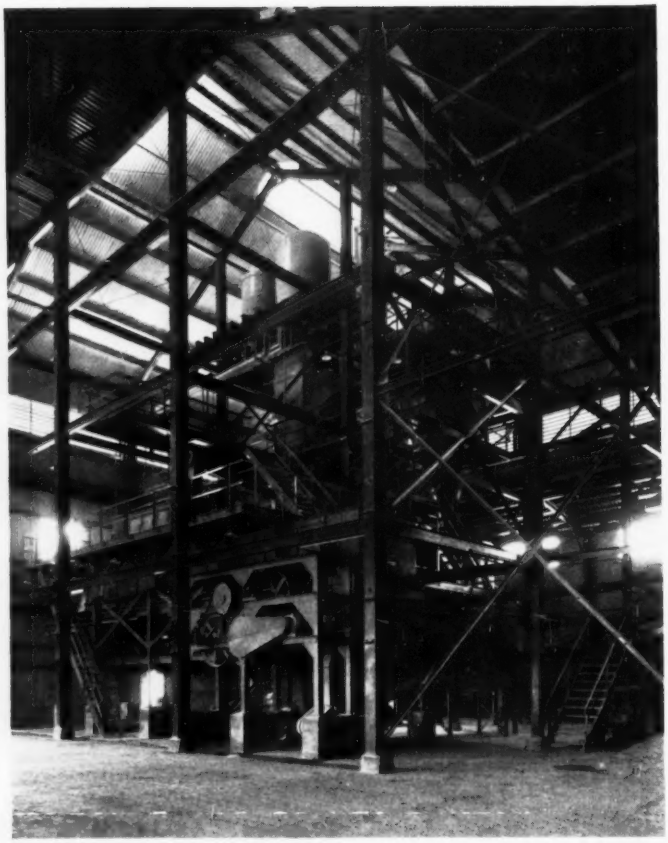
Using a low-ammonia nitrogen solution and 60° Baume acid, Mr. Henson stated that there was an advantage in avoiding the side reactions of the acid encountered in normal processing, but a disadvantage in using no anhydrous ammonia in the formulation.

N. K. Alfrey of W. R. Grace's research division made a color-slide illustrated talk—adapted from Leon Bridger's presentation at the 1959 ACS meeting—about the concentric pipe pre-reactor used in their Davison Chemical plants. This consists of a 1½-inch pipe inside a 6-inch pipe, he explained; anhydrous ammonia, nitrogen solution and water are pre-blended in the blending pipe, then fed into a larger pipe where sulfuric and phosphoric acid are introduced, and an air line is provided into this pipe to clear it on shutdown. The product is fed through a 3-inch reactor pipe before being ejected into the bottom center of the pugmill mixer used in Davison granulation plants. Stainless steel pipe with a teflon liner has been found advantageous here, Mr. Alfrey revealed.

This process is used on all grades where 60° or 66° Baume sulfuric acid is employed, he said, and—while they don't feel that this is the ultimate answer to the pre-reactor—this was a progress report on what they feel is an improved system.

In response to a question from the floor about the use of waste acid in preneutralizing, the panel came up with the answer that the composition of the materials in the acid and their chemical effect on other materials introduced would govern the advisability of using waste materials. The general feeling was that 'spent' sulfuric acids vary so much in composition that safety considerations would generally prevent use of these acids, to avoid the risk of any organic matter in them becoming nitrated and building up in the processing system.

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International Minerals cuts costs, bag breakage with WONDERWALL™



"With 70 plants in 30 states, bag breakage was a major problem," relates S. Arthur Fournier (*standing*), Purchasing Agent, Central Buying, for International Minerals & Chemical Corporation, Skokie, Illinois. "Since switching to WONDERWALL bags, breakage has been reduced up to 90% on shipments from plants using only WONDERWALL."

Customer Service Manager Joseph J. Bozis explains: "We *tested* the bag. We loaded cars half with WONDERWALL, half with conventional kraft bags. In every examination on arrival at destination WONDERWALL breakage was substantially less than ordinary kraft multiwalls."

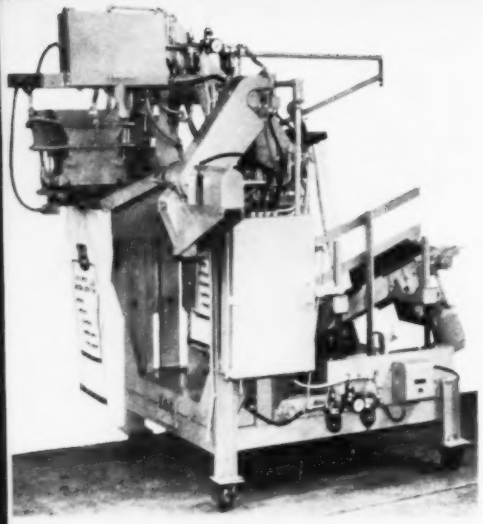
WONDERWALLS prove better because they're made with Kraftsman Clupak* paper, the tough, impact-resisting kraft with the built-in stretch—pioneered by West Virginia.

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Clupak, Inc.'s trademark for extensible paper, manufactured under its authority.

West Virginia Pulp and Paper

FREE LITERATURE ON EQUIPMENT MATERIALS AND SUPPLIES



Automatic Bag Hanger

An automatic bag hanger which supplies empty open-mouth multiwall bags to a filling machine and places them on the loading spout has been announced by Union Bag-Camp Paper Corporation. Adaptable to all Union I & C Bagger models, this auxiliary machine eliminates the need for a bag filling operator.

By utilizing both vertical and horizontal adjustments, the machine can handle a broad range of bag sizes in either gusset or tube type. To operate, any quantity up to 400 bags is placed upright in the bag magazine with the thumb notches forward. Sensing switches at both the top and bottom of the leading bag keep it always in position to be removed. The bags are moved forward at the top by pressure from a 'follower' and on either side by elongated sprockets.

A curved 'picker' opens the leading bag in the magazine by using the thumbnotch. Rotating arms next approach the open bag, allowing the 'fingers' mounted on the arms to move inside the bag. The arms stop momentarily and separate until the fingers are snug inside the bag. Then sufficient pressure is applied to move the bag out of the magazine. As the preceding bag is filled and released from the loading spout, the arms simultaneously rotate and place the empty bag on the spout.

The controls of the automatic bag hanger are interlocked with those of the automatic bag filling machine. This prevents the empty bag from moving to the loading spout until the filled bag is released. It also keeps the spout from discharging its material until it has received the empty bag. This interlocking of controls results in a range of speeds, governed entirely by the automatic bagger, up to 25 bags per minute.

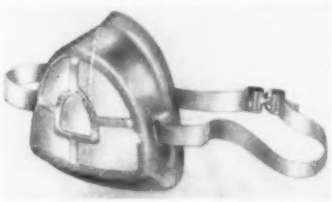
For further information, circle number 1 on CF's Information Service card, page 43.

'Canned' Pump Bulletin

New 4-page, 2-color Chempump Bulletin 1100 describes complete line of seal-less pumps for leakproof pumping. Bulletin covers design, operation, and selection of proper 'canned' pump. For free copy, circle number 2 on CF's Information Service card, page 43.

Polyethylene Dust Mask

New, low cost, lightweight polyethylene nuisance dust mask—the Welsh 'Bantam'—features one filter and one mask used for protection



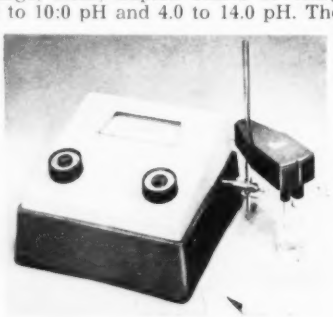
in intermittent, non-toxic spraying operations as well as against nuisance dust.

Entire unit of outer frame, filter, inner frame and headbands weighs less than an ounce. Unique polymer filter can be washed, dry cleaned and re-used . . . is not affected chemically by water, soap, oils, detergents or perspiration . . . filters minute dust particles.

For free literature, circle Number 3 on CF's Information Service card, page 43.

New pH Meter

The new Metrion pH meter announced by Coleman Instruments, offers an extended range, utilizing large, clear, duplex scales covering 0 to 10.0 pH and 4.0 to 14.0 pH. The



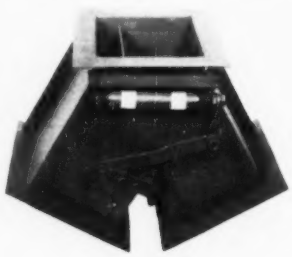
Metrion uses Coleman Screw Base Electrodes and also accepts all other modern pH electrodes. This unusually convenient electrode mounting system adapts perfectly to titrations and a wide range of sample volumes.

The Metrion is housed in a clean, compact, modern case, with high resistance to shock, acids and stains.

For full details on the Metrion, priced at $139.00, obtain Bulletin B-257 by circling number 4 on CF's Information Service card, page 43.

Bifurcating Gates

A new line of bifurcating gates for diverting a stream of bulk material from one direction to another is now available from Bucket Elevator Company. Gates feature one removable side for easy cleaning. Movement of the gate is by tilt bar



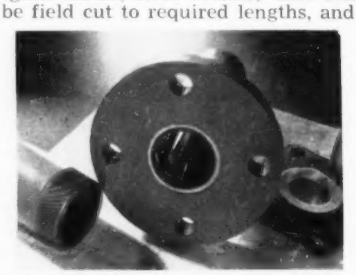
for hand operation or by air cylinder.

Standard size range is from 6" to 16", manufactured in stainless, galvanized or carbon steel. The flop gate shaft rides in self-aligning bronze bearings which can be mounted outboard with inboard mechanical seals or stuffing boxes where required.

For further details, circle number 5 on CF's Information Service card, page 43.

Field-Cut 'Glasteel' Pipe

A revolutionary new Glasteel pipe (glass inside, steel outside) that can be field cut to required lengths, and



has more than twice the glass thickness of previous glass-lined pipes is being introduced by the Pfaudler Division of Pfaudler Permutit Inc.

Rated 150 psi and available in 1½", 2" and 3" diameters, Pfaudler F-C Glasteel Pipe (F-C for 'Field cut') offers wide application in highly corrosive services (all acids, except HF, to 350 F. and even to 450 F. depending on concentration, and mild alkalies at moderate temperatures).

For further information, circle Number 6 on CF's Information Service card, page 43.



Gloves That Glow

Granet Corporation has announced a new and unique work glove, termed 'Glo-Gluvs' due to their bright 'Day-Glo' color; the gloves provide spot identification for workers involved in hazardous applications or where signaling is necessary.

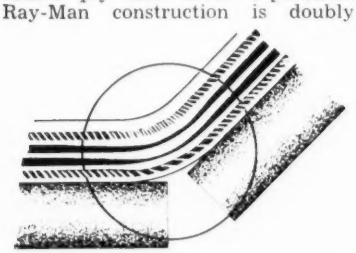
Apart from their functional value, 'Glo-Gluvs' are said to be smart appearing, their lustrous hue providing the worker with a 'lift' and tending to prevent loss of the gloves.

The manufacturer offers free sample pairs on request. For a free sample pair, circle Number 7 on CF's Information Service card, page 43.

45°-Idler Conveyor Belt

Manhattan Rubber Division of Raybestos-Manhattan, Inc., states it is now possible to successfully use and obtain the benefits of 45° troughing idlers for carrying all materials with its Ray-Man conveyor belt. Unique construction makes this belt particularly adapted for operating over 45° idlers, previously unobtainable for all but very light materials.

The sharp angle between concentrating and center rolls makes conventional slab belts difficult to train under heavy load, and flex-fatigue causes ply and cover separation. Ray-Man construction is doubly compensated so that the outer ply stretches as the inner ply contracts under both lateral and longitudinal flexing, and even on reverse bends. The outer strength member plies are constructed with a special weave high-strength synthetic fabric of carefully controlled elasticity, which relieves the stress on the belt as it travels over idlers and terminal pulleys.



The firm offers a guarantee against ply or cover separation at the idler hinge line—good for the life of the belt—when it is used with troughing idlers set at any angle up to 45°.

The principal advantage claimed in the use of the 45° idler design is the greater payload made possible with systems of this type. This increase in capacity varies with different "angles of repose" due to the size and shape of the particles and the moisture content of material handled.

Several advantages are claimed by the manufacturer to result from the use of Ray-Man belt and 45° idlers. Initial cost is lower because narrower belts and conveyor equipment will haul the same loads as belts on 20° idlers. Less space is required for narrower conveyors. Maintenance costs are lower because there is less spillage—operation is cleaner and safer and there is less downtime. There is less wear on the belt, and the cost of belt replacement is lower. If belts of the same width as a 20° idler conveyor are run on 45° idlers, load capacity can be increased by as much as 60%.

For more information regarding Ray-Man conveyor belts with 45° troughing idlers, circle number 8 on CF's Information Service card, page 43.

New Booklet on Dryers

A new 16-page two-color booklet on Louisville dryers and equipment is being offered by General American Transportation Corporation. The literature pictures and points out the features and fabrication of the dryers, coolers and ammoniator-granulators made by the company's Process Equipment Division.

For a free copy of Bulletin 59-L, circle number 9 on CF's Information Service card, page 43.



Tractor-Mounted Applicator

A new tractor-mounted tank carrier with four-row gravity distributor for liquid fertilizers has been announced by Kaw Fertilizer Service, Inc. Designed to be mounted on most late-model tractors, the inexpensive planter attachment will place starter solutions two inches to the side and below the seed, and can also be used with tillage equipment.

Application rates are regulated by replaceable plastic orifices. Used with two 55-gallon drums, the unit has 1000-pounds capacity. Addition of a John Blue squeeze pump or Hypro PTO can be made to increase versatility of the apparatus. Top photograph shows tractor-mounted unit with the four distributors displayed alongside; lower photograph shows design of tank support and ring clamp.

For additional information, circle number 10 on CF's Information Service card, page 43.

Dumper Catalog

Multi-purpose dumpers that can lift all standard and special containers and dump all free-flowing bulk material into any type of receptacle

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are illustrated in the new Essex Conveyors Catalog 59.

Load capacities and dumping heights of Essex Dumpers are limited only by the practicability of the application, according to the catalog; various types of actual working installations are pictured throughout, plus other vital information to illustrate the wide scope these dumpers have in today's highly mechanized industry.

Copies available by circling number 11 on CF's Information Service card, page 43.

Liquid Fertilizer Pumps

The Deming Company has issued a new bulletin illustrating and describing various sizes and types of pumps engineered especially for moving liquid fertilizers. Specifications are given for the Deming pumps recommended for the following applications: field spreader service, truck transport service, nurse tank service, phosphoric acid transfer, liquid blending machines, and bulk plant transfer and load out.

For your copy of the new liquid fertilizer pump bulletin, circle Number 12 on CF's Information Service card, page 43.

Marking Machine Brochure

A new catalog describing its complete line of marking, dating, coding and imprinting machines has been released by Industrial Marking Equipment Co.

The eight-page, two-color illustrated brochure includes descriptions of machines that will imprint any message on virtually any kind of carton, package, box, can, bag, wrapper, or container, and in many cases, on the unwrapped product itself. It depicts machines specially designed to solve a specific marking problem.

Included are: the 'Whippet' marker for automatic imprinting of conveyor-carried cartons and other containers; the Auto-Printer, for high-speed imprinting of cartons, multiwall bags, etc.; a new Flexo-Press, which prints multiwall bags or knocked down cartons of any size and handles the top and bottom simultaneously.

For a copy of the brochure, circle number 13 on CF's Information Service card, page 43.



Disposable Protective Suit

Safety First Supply Company has introduced a new all-purpose disposable plastic safety suit designed to protect workers in all industrial operations involving exposure to chemicals, water and excess dust or dirt.

Priced at only $3.95, this lightweight plastic suit is resistant to most acids and alkalis and fire as well as being waterproof and unaffected by oil or grease. The light yellow polyvinyl chloride slip-over jacket and trousers fit comfortably over ordinary work clothing. Elastic tape at neck, wrists and ankles insures a tight fit for additional protection against dust, sprays and splashes.

According to Safety First, the suit is the first safety garb of its kind priced low enough to be easily and economically disposable.

Further information and quantity prices may be obtained by circling number 14 on CF's Information Service card, page 43.

Low Cost Rotameter

A new, low cost flow indicator and alarm ideal for purge type service is described in Brooks Rotameter Company's Design Specification Sheet = DS-130 1, now ready for distribution.

For a free copy, circle number 15 on CF's Information Service card, page 43.

Bag Rate Conversion Table

A handy wallet-sized reference table for converting the bag-per-minute rate of filled multiwall bags to tons-per-hour, is now available from St. Regis Paper Company.

The table was designed by the company's Bag Division as a ready guide for production, materials handling, purchasing, research and engineering planning personnel.

It lists the ton-per-hour rate of from 1 to 30 bags per minute, for 100, 80, and 50 pound bags.

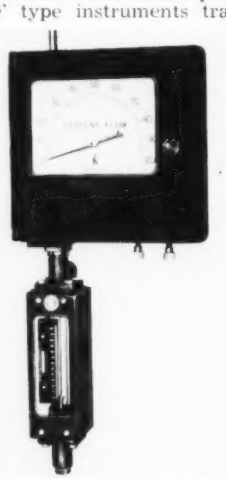
With these three bag sizes represented, the table can be used by most industries which package their products in multiwall bags.

This conversion table is available in reasonable quantities by circling number 16 on CF's Information Service card, page 43.

Transmitting Rotameters

New Bulletin 18N, published by Schutte and Koerting Company, describes this company's new Pneumatic Transmitting Rotameters.

Designated SK Model 58 Pneumatic Transmitters, these 'position-balance' type instruments transmit



an air signal proportional to fluid rates of flow to remote-located indicators, recorders, controllers, or integrators. These Pneumatic Transmitters are designed for use with either glass tube or metal-tube Rotameters. They are mounted directly on, and are magnetically coupled to the Rotameter to sense the Rotameter-measured fluid rate of flow.

The bulletin includes photos, sectional drawings, and information on materials of construction, operation and application. Characteristics of the transmitter unit, dimensions and maximum capacity ranges are also included.

Copies of Bulletin 18N can be obtained by circling number 17 on CF's Information Service card, page 43.

Engineering Constants Reference

An 8-page 3-color reference booklet, "Handy Reference Engineering Constants," is being offered free by First Machinery Corporation. A number of constants, tables and conversion factors are included.

For your copy, circle number 18 on CF's Information Service card, page 43.

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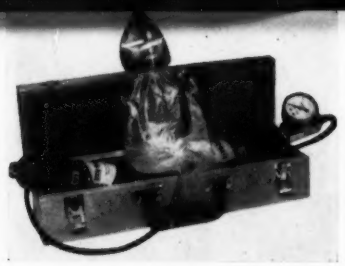
FIRST CLASS PERMIT NO. 675 (SEC. 34.9 P. L. & R.) ATLANTA, GA.

Information Service Bureau

Commercial Fertilizer and Plant Food Industry

75 Third Street, N. W.

Atlanta 8, Georgia



Portable Oxygen Resuscitator

A new low-cost portable emergency oxygen resuscitator that can be attached to any type or size oxygen supply tank without the use of a wrench has been announced by General Scientific Equipment Company. The new portable unit, known as the 'Oxy-Quik,' weighs only two and a half pounds.

It includes a face mask, a rebreathing bag to prevent oxygen waste, two oxygen cylinders (one as spare), a medical carrying case, and an automatic pressure-reducing regulator and gauge of the type usually found on only the more expensive commercial resuscitation units. The pressure gauge permits accurate control of oxygen flow at approximately six liters a minute throughout the twelve minute capacity of the tank.

Adaptors are available for refilling or use of the Oxy-Quik emergency unit directly from one, two, or eighteen hour commercial cylinders. Since the Oxy-Quik cylinders are made to government specifications, they will withstand pressures even greater than those used with large commercial tanks.

For more information, circle Number 19 on CF's Information Service card, page 43.

Poly-tape Bag Closure

In-plant closure of sewn bags with polyethylene-coated type is possible by use of a new bag sealer, the Crown Thermo-Tape machine, recently developed by Crown Zellerbach Corporation.

Easy-to-install fully-automatic Crown Thermo-Tape machine brings sift-proof polyethylene sealing directly to the packing line for filled, open-mouth multiwall bags.

The bag sealer follows Crown Zellerbach's development of the first polyethylene tape-over sewn bag for industry. This open mouth bag is delivered with the bottom sewn and sealed with poly-coated kraft tape. Duplicating the complete bottom closure of the delivered bag, the in-plant Crown Thermo-Tape machine heat-seals poly-coated kraft tape to the bag top.

The Crown Thermo-Tape machine fits into the production line in synchronization with the sewing machine. The filled multiwall bag moves into the sewing machine and then passes through the Thermo-Tape machine with no manual assistance. Tape cutting is automatic as is the tape feed mechanism which supplies tape only as required. The tape provides moisture-vapor protection for the bag ends with various weights of tape available for varying requirements.

For complete details, circle Number 20 on CF's Information Service card, page 43.

Gravity-Type Dry Mixer

A bulletin describing its new low-cost gravity-type mixer for dry or semi-dry fertilizer materials is being offered by Chemical Engineering Service Division of Manitowoc Shipbuilding, Inc. The unit, which has no moving parts and requires no operator, features high capacity and thorough, instantaneous mixing. It is designed for use as a bulk blending plant, dry-mixing bulk or bag plant, premixing solids before ammoniation, mixing solids and converting from batch to continuous flow, and—by addition of an intermediate section—as a mixer and surge or supply hopper.

Other features highlighted by the manufacturer are: no power required, no maintenance, ease of installation and of cleaning, and rugged long-life construction.

For a free copy of this descriptive bulletin, circle number 21 on CF's Information Service card, page 43.

New-Type Chain Mill

A new type chain mill featuring heavy coil flexible link chain and solid heat treated steel bar ends is announced by Fertilizer Engineering & Equipment Company, Inc. adopted from the standard mill, the solid bar ends and special interval cleaning chains reduce chain replacements to a minimum and minimize-build-up of material. Unit comes complete with a coupling for direct drive.

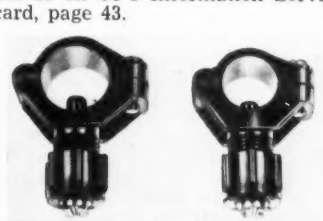
For free literature, circle Number 22 on CF's Information Service card, page 43.

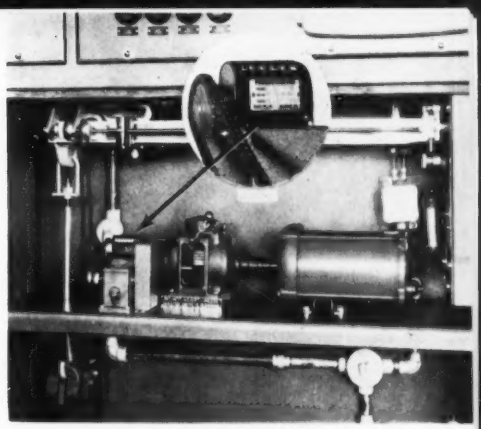
Nylon Sprayer Eyelets

Because nylon offers maximum resistance to the corrosive effects of agricultural chemicals Delavan Manufacturing Company has begun making eyelets of nylon. The rugged nylon parts, according to Delavan, are not a copy of similar metal products, but are specifically manufactured with the properties and characteristics of nylon in mind.

Simple to install on the boom, they have only one cap screw to tighten; replacement in the field is quick and easy because there is no need to remove other nozzles or eyelet adapters on the boom when making the change. The positive Hycar washer makes installation leak-proof. The eyelet can be installed in production by drilling or punching an 11/32" hole in the boom. A lock nut is available for clamping to angle or channel boom.

For more information on Delavan's new nylon eyelets, circle number 23 on CF's Information Service card, page 43.





Counter in Feeder System

The flow of materials is automatically totalized and over- and underfeed is corrected in a Continuous Loss-in-Weight Gravimetric Feeder, manufactured by B-I-F Industries, Omega Division. The unit continuously feeds and weighs, in pounds, to an accuracy of ½ of 1-percent, any pulverized, granulated, stringy, lumpy or cohesive solids used in fertilizer processing or similar industrial fields.

The feeder controls materials flow through a 'dead-weight' system; the material hopper, containing several hours supply, is mounted on a scale level system and counterbalanced by a scale beam and traveling counterpoise. A lead screw, rotated by a constant speed motor, retracts the counterpoise along the scale beam at a rate related to the desired rate of feed so that materials are metered accurately to formulate any desired blend of chemicals or other flowable substance. A wide range of units provide for capacities from one to 60,000 pounds per hour, and ranges up to 50-1.

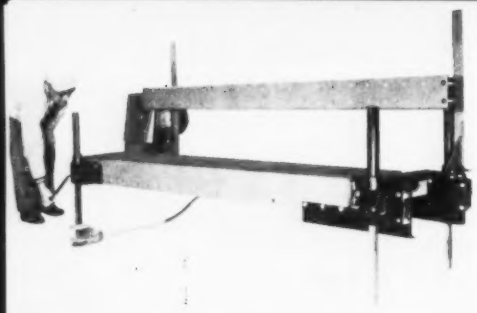
The Model D-6 Rotary Counter, manufactured by Durant Manufacturing Company, is used to provide a minimum of backlash, good visibility ,oiless bearings and stainless steel shafts. The counter is a non-reset model to prevent error in reading and any possible loss of record. It is driven from a lead screw which has a known weight per revolution, and by chain and sprocket of correct ratio to the lead screw to record the accurate weight of materials being discharged from the feeder. Using this counter in conjunction with the automatic flow control, a record is made of the number of turns the lead screw has made, and the exact amount of material that has been fed can be accurately measured to correct any degree of over- or underfeed.

Complete information on the use of this and other models in the full line of Durant counters, applied to your specific operation, may be obtained by circling number 24 on CF's Information Service card, page 43.

High Capacity Flow Indicator

A new, low cost, high capacity flow meter featuring an integral by-pass design is described in Brooks Design Specification Sheet #DS—132 now ready for distribution.

For your copy, circle number 25 on CF's Information Service card, page 43.



New Flat Belt Conveyor

Unique flexibility in bagging operations is provided by a new flat belt conveyor which can be adjusted in height as well as length, according to Richardson Scale Co.

An adaptation of the Model GA-11 bag conveyor which allows changes in length from 7 to 12 feet, the new unit's standard height of 8 inches can be easily jacked by one operator to any position within a range of 12 inches.

The new conveyor is designed for all package conveying, and in particular to convey filled bags from weighing and packing equipment through a sewing operation. Richardson points out substantial cost savings are realizable by mass production on standard unit to fit all applications.

The adjustable features contribute to simple installation, and when changes in production layout are required the conveyor is readily adaptable to smaller or larger space requirements. The surface of the belt is absolutely flat since the belt rides on flat metal skid plates. All sizes of bags may be conveyed because there are no obstructions or confining braces.

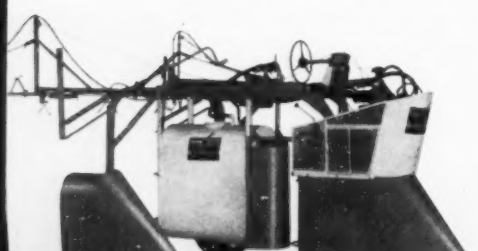
For further information, circle number 26 on CF's Information Service card, page 43.

New-Model Sprayers

Hahn, Inc., originators of the 'Hi-Boy' self-propelled, high-clearance sprayer, announces nine new 1960 models. The Hi-Boy is specially designed for application of liquid fertilizers, for weed control, and for thorough spraying of all crops through every stage of growth. All machines feature rustproof aluminized-steel tanks and booms.

New improvements on Model H-300 shown include: Boosting horsepower to 30 and maximum speed to 20 m.p.h. Increasing tank capacity to 200 gallons. New heavy-duty frame designed to permit full clearance of plants as machine goes through field. Yoke rear wheels design to permit use of larger, 7.50 x 20 tires for added stability, more mud clearance, extra traction in irrigated or sandy soil; also, quicker, easier tread width adjustment to work 36," 38", 40", or 42" rows. New 'Full-Slope' fenders with no sharp edges so Hi-Boy can be run through rankest growth without damaging plants. Same machine also available with 24 h.p. engine (Model H-240).

For more information, circle number 27 on CF's Information Service card, page 43.



Chemical Testing Booklet

A new bulletin describing their low cost, fast, soils analysis service is offered by United States Testing Company, with laboratories in all major farm areas. This service is of real interest to fertilizer manufacturers and others with high-volume testing requirements.

The bulletin details the types of services performed and who can benefit most from them. It also outlines the steps for soil sampling and for using the service. Sample Crop Information Sheet and Test Reports are illustrated. Information on fertilizer and plant tissue analysis is also given. For copies of the bulletin, circle number 28 on CF's Information Service card, page 43.

New Type Valve Bag

Tight, durable sealing is claimed for users of multiwall pasted valve bags with Crown Zellerbach's new sleeve, The Crown Cuffed Tuck-In-Sleeve.

The Cuffed TIS for flush cut or stepped-end pasted valve bags is turned back at the insert end of the sleeve to provide a double-thickness (or cuff) approximately one and one half inches wide. The cuff plus a band of adhesive assures a flat, securely-held, sift-proof closure.

The Crown Cuffed TIS can be tucked deeper into the critical valve area, assuring snug seating of the sleeve-end into the cuff pocket well past the glue line. The increased tuck-in surface and doubled thickness at the cuffed edge virtually eliminate the possibility of a packer operator breaking the glue bond during closure; decreased sleeve separations and minimized valve breakage combine to reduce bag wastage.

For further information, circle number 29 on CF's Information Service card, page 43.

Haulage Machines Booklet

'Haulage Machines,' Book 2892, contains 14 typical layouts that illustrate the main types of applications to which car spotters and car pullers can be adapted. Most commonly used for moving railroad cars, these machines are also successfully employed in handling a wide range of mobile loads such as warping barges along a dock.

Haulage machines made by Link-Belt are of two types, capstan car spotters and drum type car pullers. Manufactured in a wide range of sizes, they can be arranged in pairs or with sheaves and snatch blocks to provide flexibility and to handle complex haulage assignments. The complete line of Link-Belt car spotters, car pullers and 33 accessories are described in the new 20-page book which also gives engineering and selection data. A copy of Book 2892, 'Haulage Machines,' can be had free by circling number 30 on CF's Information Service card, page 43.

Formula Capsule Data Sheet

A formula capsule which eliminates manual errors in blending, proportioning and batching operations by taking formulation out of the hands of the operator and automatically setting correct proportions of chemicals and similar materials is described in Product Data Sheet 5904, now available from Richardson Scale Co.

The new data sheet describes how this pocket-size unit programs the weighing of up to 24 solid and/or liquid ingredients.

Advantages of the capsule are listed, and the steps to be taken in setting up a formula are enumerated. The equipment is illustrated with photographs and drawings.

For copies of Product Data Sheet 5904, circle number 31 on CF's Information Service card, page 43.

Vibration-Inducer Catalog

Martin Engineering Company has announced a new 38-page catalog which provides engineering data, specifications and a price list on the 'vibrolator' line of vibration inducers. It lists 52 sizes and types from the BD-10 (4½ ozs.) to the 3000 lb. impact CCVP series hopper car shaker (72 lbs.). Units are available in five motive powers—pneumatic, electric, gasoline, hydraulic and steam.

Included in the catalog is an instruction sheet on the CCVP series, illustrating how motor can be replaced in 3 minutes or changed from air to electric or hydraulic power source. Also shown is a new forced air cooled 'Motomagnetic' electric vibrator of adjustable frequency for use where difficult ambients are a problem.

Installation data sheet may be filled out and sent to factory for help in solving problems of applied vibration.

For a free copy of the catalog, circle number 32 on CF's Information Service card, page 43.

New Impact Mills

Equipment for mixing and grinding in a single operation is now offered by the Entoleter Division of Safety Industries, Inc. This combination operation uses centrifugal force and shattering impact to mix, grind, deagglomerate, disperse and reduce particle size simultaneously.

Two types of Entoleter impact mills are available. The basic impact mill has a revolving disk onto which the material to be reduced is fed. The spinning disk throws the coarse material against the stationary walls of the mill, thereby accomplishing the mixing, grinding, and other actions.

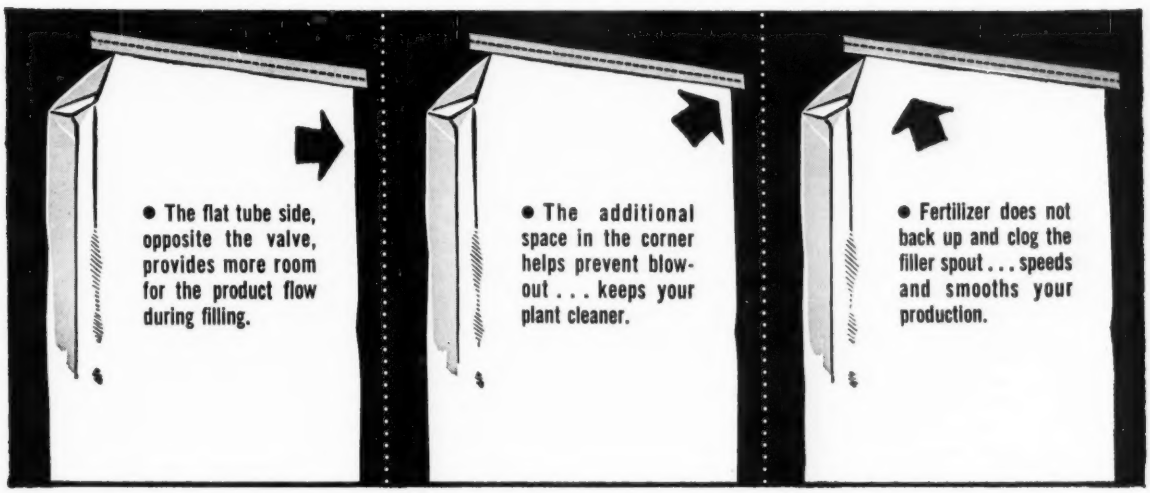
Entoleter's new 'Contramil' has the impact wall revolving counter to the spinning disk. The counter-spinning action allows fine grinding to sub-seive range, giving product with minimum particle size variation and reduced fines and oversize product.

For further information, circle number 33 on CF's Information Service card, page 43.

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ANOTHER IMPORTANT BONUS FOR YOU...

Bemis Single-Gusset Sewn-Valve Multiwalls

The new Bemis Single-Gusset Sewn-Valve Multiwall will improve your packing performance, *because*



And there is a good chance this new Bemis Multiwall will cost you less, too. The additional usable space created by the flat tube corner often permits the use of a shorter bag, which would save you money. Your Bemis Man will check this possibility with you.

Bemis Single-Gusset Multiwalls Stack Perfectly, Too

You can palletize Bemis Single-Gusset Multiwalls easily and firmly . . . and pile them three pallet loads high, if you wish. They square up well. In fact, you have to look rather closely at stacked bags in the warehouse to determine whether they are single-gusset or two-gusset types.

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The International Scene

LATIN AMERICA

"Make Common Market Practical"

Meeting in San Salvador, a group of Central American investors conferred late in October on ways and means to eliminate the "ruinous competition" within the five-country area of Guatemala, Honduras, Nicaragua, El Salvador and Costa Rica. They felt that the economists laying the groundwork for the Common Market of those five states were on the theoretical side, and asked that matters be handled in more practical fashion.

From our standpoint, the matter of fertilizer plants was of special interest. El Salvador and Guatemala are bitter rivals in the contest to see who will supply the 1963 figure of 289,626 metric tons. There was a cry for calm planning, and the selection of a site which would be economic from a production standpoint, and which could best serve the entire region.

AUSTRALIA

100,000 Ton Plant for Queensland

After a long study of the subject, the Government has concluded that the demand exists to make practical a 100,000 annual ton nitrogenous fertilizer plant in Queensland. It is expected this would cost seven million pounds. An American company is interested in aiding the project, the cost of which has long deterred any action.

CHINA

Hastening Farm Mechanization

Communist China is trying to get on with the process of substituting machines for peasant labor, and recognizes that it will be slow in taking hold. But they think that by 1969 "all land that can be plowed by machines will be so plowed". The same source predicted that within the ten year period the use of fertilizer would increase by six or seven times, from the present 2,500,000 annual tons now consumed.

It is thought that recent steel orders to Sheffield, England, were intended to go into the manufacture of fertilizer and other chemical plants, and fertilizing equipment.

CUBA

American Investments Endangered?

Several hundred millions of investments by concerns in and associated with the fertilizer industry seem to be in grave danger from the 25% levy on gross receipts called for in Cuba's mineral law. We have previously listed many of these.

FRANCE

Chemical Exports Ahead of Imports

For the first time, in the first half of 1958, the chemical industry in France exported more than it imported, including such items as sulphuric acid and 324,800 tons of ammonia.

FINLAND

Makes More, Imports Less

Finnish production of fertilizers totaled 784,688 tons in 1958, compared with 740,395 tons in 1957. The 1958 output included 156,000 tons of superphosphate, 186,000 tons of "Kotka" phosphate, 28,000 tons of ground phosphate rock, 150,000 tons of calcium ammonium nitrate, 13,000 tons of miscellaneous materials, and 296,000 tons of mixed fertilizers. Some of the above materials and other imported ingredients are used in the manufacture of mixed fertilizers. Total fertilizer imports amounted to 413,512 tons in 1958 compared with 518,157 tons in 1957. Small-scale, uneconomic production of ammonium sulphate was discontinued in 1957.

HUNGARY

Needs More Nitrogen

Hungary, in setting up its targets for the 1961-65 Plan lists a need to increase N output 500%, superphosphate more than trebled to 650,000 annual tons.

INDIA

Working Toward Needs

PHOSPHATIC. — Single superphosphate is the only phosphatic fertilizer manufactured in India. In 1958, 15 plants had an installed capacity of 310,570 tons, compared with 13 plants and 277,570 tons in 1957. Production of 181,000 tons was considerably below capacity which remains idle largely for want of raw materials.

NITROGENOUS. — Continued Government publicity urging use of nitrogenous fertilizers to increase food production has led farmers to use more ammonium sulfate, the only nitrogenous fertilizer manufactured domestically and demand for which greatly exceeds official estimates. Plans are underway to increase total capacity to 382,000 tons of nitrogen (about 2 million tons in terms of ammonium sulfate) by 1961.

In addition, negotiations for utilization of gases from two oil refineries in Bombay are in progress, the estimated cost to be Rs. 248 million for 90,000 tons of nitrogen annually, 45,000 tons as urea and 45,000 tons as compound fertilizers.

Expansion of the Sindri factory based on utilization of coke-oven gases has been almost completed, estimated cost Rs. 130 million, and trial production in the new plant has begun.

An air liquefaction plant and a new sulfuric acid works, part of the planned expansion at the Alwaye fertilizer plant, have been commissioned. A new dryer and ancillary equipment in the sulfate plant were brought into use in 1959. Other work is said to be progressing on schedule.

MEXICO

Govt. May Produce Sulphur

The announcement of strict Government vigilance of sulphur extraction has led to speculation that the government is contemplating direct working of sulphur deposits on its own account.

Private sulphur firm sources said the new rules could open the way to government operations in the sulphur industry and the denial of permits in the future for new private firms.

The government, through the official development bank, Nacional Financiera, already owns the Isthmus of Tehuantepec properties formerly held by the Mexican Gulf Sulphur co.

MOROCCO

Rock Climbs 14%

Production of phosphate rock in Morocco increased 14 percent in 1958 to 6,355,000 metric tons. Exports totaled 6,132,663 tons, European countries being the leading destinations. Six countries, France, Great Britain, Italy, Spain, Germany, and Belgium, each took more than 500,000 tons, and together accounted for

64 percent of the total. Facilities for handling phosphate rock were modernized in 1958, including extension of dock space at Casablanca, aquisition of new ore wagons, and doubling of the railroad track for part of the distance between the mines and the port.

NETHERLANDS

Selling N to the US

The Netherlands is an important agricultural country and the intensive farming carried on there has stimulated the development of a large fertilizer industry. Production of nitrogenous fertilizers in particular has increased substantially in recent years. In 1958 the Netherlands State Coal Mines alone had an output of 919 thousand tons of nitrogenous fertilizers—more than half the total production.

Exports of calcium ammonium nitrate containing less than 34 percent of nitrogen last year amounted to 337,313 tons worth $13.5 million. The chief importer was the United States (118,607 tons), followed by Yugoslavia (29,095 tons) and Egypt (18,018 tons).

Exports of ammonium sulphate totalled 322,382 tons, valued at $12.8 million. The principal countries of destination were Spain, 91,965 tons; South Korea, 51,740; Communist China, 47,111; Ireland, 22,986 and Indonesia, 22,064.

Production* of phosphate fertilizers amounted to 190 thousand tons in 1958. Destination of exports is not made known, but these totalled 378,455 tons worth $12.3 million in 1958.

Nine plants in the Netherlands produce sulphuric acid, to an annual total of well over 700 thousand tons. Exports in 1958 were as follows: Sulphuric acid up to 60° Beaume: 48,929 tons — $519,500. Sulphuric acid of more than 60° Beaume: 24,831 tons—$556,750.

Countries of destination are not published.

Imports about equal exports and come almost entirely from Belgium/Luxembourg, with small amounts from West Germany and Norway.

PAKISTAN

Importing $15,000,000

Fertilizers to the extent of $15,000,000 will definitely be imported by Pakistan in this fiscal year, and this may be augmented by another 100,000 tons, bringing the total to $25,000,000. The Daudkhel ammonium sulphate plant can supply 50,000 tons, but the requirement for the season is from 200,000 to 300,000 tons of total fertilizer. It is expected as the next five year plan develops that by 1964-65 the need will be for 740,000 tons.

RHODESIA

Planning $25,000,000 Plant

The Federal Minister of Agriculture recently stated that he would meet representatives of the Anglo American Corp. of South Africa in the interest of the possible establishment of a nitrogenous fertilizer factory. Estimated investment would be £9 million ($25 million).

Shimura Kako Chemical Processing, a Japanese firm, and Anglovaal, Ltd., owners of the Trojan Nickel Mine, Ltd., have signed an agreement which will make them partners in a new £1 million ($2.8 million) nickel smelting and refinishing plant to be built at Bindura.

A new hospital costing £260,000 ($720,000) will be started in Lusaka this year.



SOUTH AFRICA

To Boost Phosphate

Plans are now being considered to increase the production of phosphate in South Africa in order to make the country independent of imports for at least the next two years. This will be done by expanding Foskor, which now mines about 25% of the needs.

VENEZUELA

Needs 15,000 More Tons

The president of the Venezuelan Petrochemical Institute says that the local plant can supply only 25,000 of the 40,000 annual tons needed by Venezuelan agriculture.

VIET-NAM

Phosphate From Paracels

A total of 20,000 tons of organic phosphate with guano as a base will arrive in Viet-Nam from the Paracel Islands between now and the end of the year. Mr. Le Van Cang, managing Chairman of the Company for Development of the Paracel Islands, announced that 522 tons are already stored in the company's warehouses at Tan Thuan Dong.

This phosphate, he said, is water soluble and suitable for fertilizing a wide variety of crops. Production is expected to reach 50,000 tons in 1960. Mr. Le Van Cang further stated that the Paracel Islands, comprising some 130 islets about 450 kilometers off Da Nang in the Central area of Viet-Nam, have a reserve of more than 20 millions of tons of organic phosphate.

W. GERMANY

Potash Exports Climb

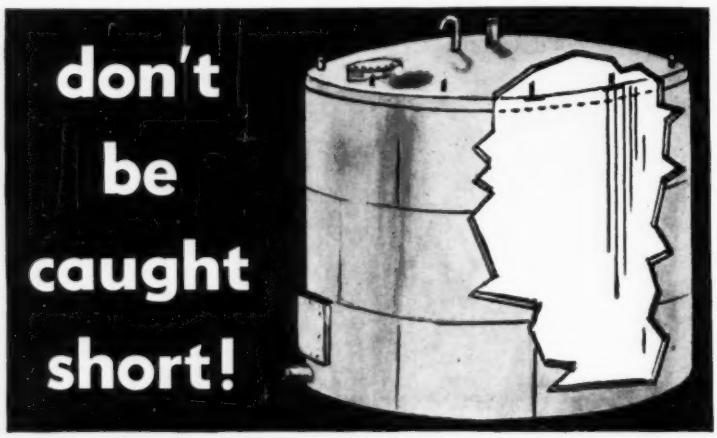
West German potash exports the first eight months of 1959 were well above those for the same period of last lear, the West German economic news agency, VWD, reported.

They amounted to 479,000 tons of pure potash (K20) for the first eight months against 417,000 tons in the same period last year and 630,000 tons for the whole of 1958.

BRAZIL

Fertilizer from East Germany

The Government has authorized the Brazilian Coffee Institute to swap coffee for fertilizer from East Germany—75,000 tons of fertilizer, 60,000 tons of potassium chloride, 15,000 tons of ammonium sulfate. The Institute will sell the fertilizer to coffee growers.



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GRANTS

$11,895

A one year grant of $11,895 has been made by the Atomic Energy Commission to finance a study of the calcium feeding patterns of plants. The project will be carried out by Dr. Herbert Massey, for the Kentucky Research Foundation, University of Kentucky.

The reason for AEC's interest is that strontium from radioactive fallout is taken up by plants in the same manner as calcium—and the research will be valuable in areas of human consumption of food plants for man and beast.

$1,000

Pacific Northwest Plant Food Association has granted $1,000 for an Oregon fertilizer demonstration project, which will be headed by Glenn Holt.

Five Oregon counties have been chosen and the object is to wind up with 10 good plots in each county of about 1/30 acre each, on which will be tested response to fertilizer of various crops, depending on the local soil situation.

CHANGES



Here, in front of one of the historic borax wagons now enshrined in Death Valley Museum, are key men in the new U. S. Borax plan to serve industrial, agricultural and plant food classifications. Left to right, L. R. Boynton, director of field sales operations; R. W. Hinchman, director of industrial chemical sales; J. E. Fletcher, director of plant food sales; W. J. Dibble, director of marketing; Dr. L. M. Stahler, director of agricultural chemical sales; M. H. Pickard, director of product development and market research; T. R. Stetson, director of exports; and W. E. Maley, director of traffic.

U. S. Borax

Realignment of the marketing department of United States Borax & Chemical Corporation to conform with the new and streamlined corporate management structure is announced by J. F. Corkill, vice president in charge of marketing.

The department, now is organized to serve three major markets—industrial, agricultural and plant food—replacing the previous marketing categories of basic products, borax and potash. W. J. Dibble has been appointed to the newly-created position of director of marketing.

Other key appointments include R. W. Hinchman as director of industrial chemical sales; John E. Fletcher, director of plant food sales; L. Ralph Boynton, director of field sales operations, and J. M. Nunn, director of advertising and sales promotion.

M. H. Pickard continues as director of market development and technical service, with Dr. L. M. Stahler as director of agricultural chemical sales, T. R. Stetson as director of exports, and W. E. Maley as director of traffic for both the marketing department and 20 Mule Team Products Department. Dr. Ed Kapusta has been appointed assistant director of market development and technical service, F. M. Dosch, assistant director of agricultural chemical sales, and J. Loesel, assistant director of field sales operations.

U. S. Borax has established four new district offices, with J. Loesel appointed district manager in New York, W. G. Coray in Chicago, R. H. Walton in Atlanta and E. M. Kitchen in Los Angeles.

Other appointments announced by Mr. Corkill include Dr. J. A. Naftel, special assistant to the vice president; A. G. Hesse, assistant to the director of marketing; John Turner, plant food products development manager; and Ben Pickering, market research manager.

Chattanooga Boiler & Tank Selling 'Southland' Packers

Chattanooga Boiler and Tank Company has announced cancellation of its contract with Chase Bag Company which gave Chase exclusive sales rights to Southland Packers manufactured by the Chattanooga firm.

Until appointment of a new sales agency, Chattanooga Boiler and Tank Co., P. O. Box 110, Chattanooga, Tenn., can be contacted direct for new packers and replacement parts. The company will continue to manufacture the Southland Packer.

Division Status For W. Va. Multiwall Sales

Multiwall bag operations of West Virginia Pulp and Paper Company are being given full divisional status because of their growing importance in the company picture, it was announced by David L. Luke 3rd, executive vice president, commercial.

Victor S. Luke, who has had wide experience in administration, operations and sales with two of the company's papermaking divisions, has been named manager of the Multiwall Bag Division, a newly-created position. The new manager will be responsible for all aspects of the Multiwall Bag Division's activities, which are organized on a regional basis.

Under the new organizational set-up, Sheldon Y. Carnes, manager of the northern region, with headquarters in New York, and Jason M. Elsas, manager of the southern region, with headquarters in New Orleans, will report directly to the division manager.

The Multiwall Bag Division, which he will head, operates plants at New Orleans, St. Louis, Wellsburg, W. Va., and Torrance, Calif., and a multiwall packaging laboratory in Charleston, S. C.

Continental Conveyor Corporation Set Up

Continental Conveyor and Equipment Co., a new corporation composed principally of personnel of the parent organization, has completed purchase of the industrial division of Continental Gin Company, Birmingham. While currently operating from the original base, future plans include construction of and removal to a new site in Winfield, Ala., 80 miles north of Birmingham.

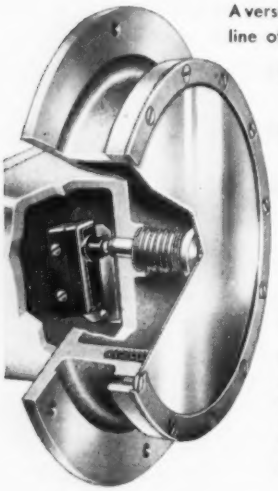
Heading up the new corporation are Nelson J. Kemp, chairman, George R. Maples, Jr., president, and Raymond C. Kirkpatrick, vice-president and treasurer. Mr. Maples has been general manager of the industrial division of the gin company for some time, while Mr. Kemp was vice-president and finance director, and Mr. Kirkpatrick was comptroller of the parent company.

Most of the engineering and sales personnel will be incorporated in the organization, and the new management emphasizes that change in ownership and corporate name will not affect company policies or products. The brand name "Continental Conveyor" well-established in the field, will be retained and complete conveyor service will continue to be offered, along with replacement and repair service on existing installations.

Officers of the newly-formed Continental Conveyor and Equipment Co.: George Maples, President; Nelson Kemp, Chairman; Raymond Kirkpatrick, Vice-President and Treasurer.



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NEW corrosion-resistant construction

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Serving the
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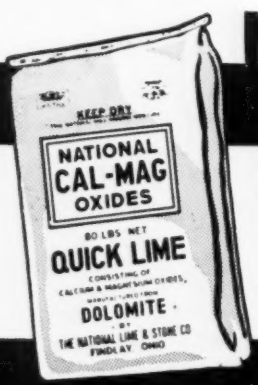
Fertilizer Equipment Sales Corp.
Designers — Engineers — Manufacturers of Fertilizer Machinery

Sales and engineering office:
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Doraville, Ga.
P. O. Box 9755
Atlanta 19, Ga.
Phone GLendale 7-0286

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Screened to size

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General Offices • • • • • FINDLAY, OHIO

Nichols to Sell Sludge Concentrator

Mark B. Owen, vice president, announces the acquisition by Nichols Engineering and Research Corp., 70 Pine Street, New York City, of the exclusive manufacturing and sales rights in the United States of the Equipment Development Company's 'Roto Plug' Sludge Concentrator.

This revolutionary method of dewatering sewage sludge requires no chemicals, uses lower power, is continuous and automatic.

B-I-F Industries Sets Up Regions

B-I-F Industries, Inc. of Providence, R. I., manufacturers of meters, feeders, controls for materials in motion, announces the formation of Eastern, Central and Western regional operations for its U. S. and Canadian field sales organization according to an announcement made by W. L. Sammons, general sales manager of the company.

The Eastern Region, with headquarters in New York City is under the direction of Douglass Taber; the Central Region is headed by Paul A. Coffman, Jr., who will make his headquarters in Chicago; and the Western Region is headed by Edward F. Morey, Jr. with offices in Dallas.

Niagara Opens Fresno Offices

On New Year's Day Fresno became the headquarters for 11 western states in the recently merged operations of Sunland Industries, Inc., and the Niagara Chemical Division of the Food Machinery and Chemical Corporation.

Dr. Guy F. MacLeod, vice president of Sunland, said the Fresno chemical plant, will become the central office for the four regions of the FMC division's western agricultural department.

Speaking as representative for Stuart H. Bear, manager of Niagara, Dr. MacLeod announced L. M. Duckworth will head the western department. James H. Molich, formerly the assistant sales manager of Sunland, has been appointed manager of the Fresno division. Other divisions are located in Richmond, Anaheim and Yakima, Wash.

Mr. Duckworth explained the expansion also will make Fresno the headquarters for the fertilizer division under E. F. Cunliffe, and public relations and product promotion under Dr. MacLeod. R. L. Jensen will be administrative assistant to Mr. Duckworth, who explained the new divisions were prompted by the Sunland purchase, a transaction completed last March.

Sunland will be known now as part of the Niagara division. However, FMC officials said the Sunland name still will be part of the distribution system through continuance of the product labels.

HONORS

Werner Nelson Elected By Soil Science Society

Dr. Werner L. Nelson, Midwest Director of the American Potash Institute, has been elected vice president of the Soil Science Society of America for this year, it was announced by the Society's headquarters in Madison, Wisconsin.



Nelson

Dr. Nelson has long been active in the Society's affairs, serving as associate editor of the SSSA Proceedings from March, 1956 through December, 1959 and as vice chairman and chairman of Division IV (on soil fertility) in 1954 and 1955.

IMC Scholarships Honor Louis Ware

Establishment of a unique program of scholarship and fellowship awards in the field of agriculture and mining was announced by International Minerals & Chemical Corporation at a dinner honoring Louis Ware, IMC chairman of the board, on his 20th anniversary with the company.

Called the "Louis Ware Scholarships for Outstanding Achievement in Agricultural and Mining Sciences," the program provides for twelve $1,000 senior year scholarships to students interested in pursuing graduate studies in the areas of mining and agriculture. The six students in each area would then compete, during their senior year, for a $3,000 annual fellowship leading to a doctorate degree.

Onstot Wins Geiger Award

Perry O. Onstot, agronomist and mixed fertilizer sales promotion manager, W. R. Grace & Co. Davison Chemical division, has been named as the 1959 recipient of the Marlin G. Geiger award, given annually to a Davison employee who has made outstanding contributions to the progress of the company. The award is $1,000 and an illuminated scroll.

Mr. Onstot was chosen for his development of the Davco Crop Feeding Program. In this, Davison representatives cooperate with farmers and state and county agricultural authorities in preparing crop feeding recommendations which take into consideration past history of the farm, current soil conditions as revealed by unbiased laboratory tests, and future rotation plans.

The presentation of the award was made jointly by Mr. Geiger, executive vice-president of W. R. Grace & Co. in charge of chemical divisions, and W. E. McGuirk, Jr., president of the Davison division.

SPENCER ADS WIN "INTEREST AWARD"



Top readership for fertilizer advertising in farm papers has won a Readex Reader Interest Award for Spencer Chemical Company. Bert Lund, Advertising Manager of "The Farmer," is shown here presenting the award to Byron Kern, vice-president, agricultural chemicals, for Spencer. Others in the picture are Richard W. Dodderidge, Spencer account executive with Bruce B. Brewer and Company, and M. H. Straight, Spencer advertising director. Basis of the award was Spencer's advertising performance, 1950 through 1959. During this period, four out of the top five fertilizer advertisements in "The Farmer" which were rated by Readex came from Spencer.

MEETINGS

Demont Galbraith Elected by CFA

Demont W. Galbraith, Woodland, was elected president of the California Fertilizer Association in its 36th annual convention in San Francisco. He succeeds Howard Hawkins, Glendora.

Other officers are James F. Sloan, Salinas, vice-president; L. M. Roberts, San Francisco, secretary; and John N. Williams, Chula Vista, treasurer. Sidney H. Bierly, Sacramento, was re-elected general manager.

Dr. Russell Coleman, executive vice-president, National Plant Food Institute, Washington, D. C., presented a new film, "Bread from Stone," produced by his organization. It pointed out that countries which employ adequate amounts of commercial fertilizer in their crop production practices enjoy the highest standards of living in the world.

A panel discussion on "Technical Progress and Business Stability," was one of the highlights of the convention.

Other speakers included Joseph E. Burger, Pasadena, H. V. Nootbaar Co. official; M. E. McCollam, chairman of the association's Soil Improvement Committee, and Vince Barnett, Hollywood comic and raconteur.

Top: Speakers' table—1960 President D. W. Galbraith; Vince Barnett, Luncheon speaker; 1958-59 President Howard Hawkins.
Center: 1960 CFA Board of Directors: Seated: Lawrence M. Roberts, 1960 Secretary, Shell Chemical Corp., San Francisco; Fred R. Bryant, Brown & Bryant, Shafter; William M. Clines, American Potash & Chemical Corp., Los Angeles; Les R. Hamilton, California Spray-Chemical Corp., Richmond; and James F. Sloan, 1960 Vice-President, J. F. Sloan Co., Salinas. Standing—Sam Mooschekian, Downey Fertilizer Co., Downey; John N. Williams, 1960 Treasurer, General Fertilizer and Supply Co., Chula Vista; Demont W. Galbraith, 1960 President, Agriform of Northern California, Inc., Woodland; Howard H. Hawkins, 1958-59 President, Golden State Plant Food Co., Glendora; John Taylor, John Taylor Fertilizers, Sacramento; and Sidney H. Bierly, CFA General Manager, Sacramento.
Bottom: Panel on subject "Technical Progress and Business Stability:" Floyd Hornibrook, The Best Fertilizers Co., Lathrop, Calif.; Dr. Malcolm H. McVickar, California Spray-Chemical Corp., Richmond, Calif.; Dr. Guy F. MacLeod, Sunland Industries, Inc., Fresno; CFA President D. W. Galbraith, Agriform of Northern California, Inc., Woodland; Panel Moderator, R. L. Luckhardt, Collier Carbon & Chemical Corp., San Francisco; William E. Snyder, Wilbur-Ellis Co., Los Angeles; and James F. Sloan, J. F. Sloan Co., Salinas.







Stocker Re-elected By Minnesota Assn.

Members of the Minnesota Fertilizer Industry Association re-elected Phil Stocker, Land O'Lakes Creameries, Inc., president at the organization's business meeting at St. Paul last week, following the Minnesota Soils and Fertilizer Short Course.

Other officers re-elected were: John Coates, International Minerals & Chemical Corp., vice president; Robert Munson, American Potash Institute, secretary; and O. J. Arlien, Minnesota Farm Bureau Service, treasurer.

Named to the executive committee for two year terms were: Richard Fancher, Welcome Chemical Co., Welcome, Minn.; and William Rasmussen, Northern Chemical Co., E. Grand Forks, N. D. Ray Mittness, Spencer Chemical Co., was elected to fill the unexpired term of Ralph Willets, who was recently transferred by Spencer Chemical Co., to Kansas City, Mo.

Banker Featured at Arizona Conference

Highlighting the banquet program at the Third Arizona Fertilizer Conference this year will be a talk by Carlos E. Ronstadt, long time Arizona banker and director and vice president of the Southern Arizona Bank and Trust Co. Mr. Ronstadt will give his views on agricultural production credit and financing as it relates to proper fertilization practices. The banquet will begin at 7 p.m. at the Sands Motor Motel in Tucson on Wednesday, January 20, at the end of the first day of the conference.

Scheduled for January 20 and 21 at the University of Arizona, Tucson, the conference is expected to attract many fertilizer industry representatives, University of Arizona and USDA personnel, and growers from nearby Western States.

The Conference is presented by the University of Arizona in cooperation with the Arizona Agricultural Chemicals Association and the National Plant Food Institute. Dr. R. B. Bahme, NPFI Western Regional Director, and Dr. Wallace Fuller, head of the University of Arizona's Department of Agricultural Chemistry and Soils, have worked closely together in setting up this year's Conference program.

Chairman for the two day Conference are Dr. Malcolm McVickar, California Spray Chemical Co., and Ed. Gould, Shell Chemical Corp., both of San Francisco.

Midwest Industry-Agronomist Plans Ready for February Meeting

Plans are being speeded for the 12th annual Joint Meeting of Midwestern Agronomists and Fertilizer Industry Representatives in Chicago, Feb. 11-12, under the auspices of NPFI's Midwest office.

The fast-moving two-day program is expected to draw more than 700 to the Edgewater Beach Hotel in Chicago. Dr. George E. Smith, chairman of the University of Missouri's Soils Department, will be chairman and Dr. M. B. Russell, head of the University of Illinois' Agronomy Department will be co-chairman.

Among headline features will be a report on "What Farmers Expect from Their Fertilizer Dealer," by Dr. Joseph Bohlen and George Deal, Iowa State University rural sociologists. The report will cite the characteristics of good fertilizer dealers and how they profitably serve their farmer customers; and they will enumerate the shortcomings of indifferent and poor dealers.

Soils specialists from four Midwestern agricultural colleges—Purdue University, Michigan State University, the University of Missouri and South Dakota State College—will present reports on the latest research on fertilizer use in cutting costs of crop production and increasing net income.

Another feature will be one of the first showings of the new NPFI color movie, "Bread from Stone."

Western Oregon Conference Jan. 14

The Pacific Northwest Plant Food Association will conduct a one day 10 to 5 conference presenting these and other subjects of importance to fertilizer dealers: Liability Products Insurance; Bankers Role in Financing Fertilizers; New Developments in Strawberry Fertilization; Molybdenum and Live Studies; Making the Most of Your Advertising Dollar; What the College is Doing on Soil Testing; A Panel Discussion on Forage Crops.

The conference will be held January 14 at Withycombe Hall, Corvallis, Oregon.

N. E. Workshop January 21

Meeting at the Hotel Hershey in Hershey, Pa. the Northeast Fertilizer Promotion Workshop will get under way at 9:45, and close at 3:50, with Russell Coleman, NPFI as chairman. During the day there will be shown four Empire Sales Film Strips and a movie, each setting the pace for talks by such men as H. R. Albrecht, Moyle S. Williams, H. B. Sprague, W. R. Allstetter, Merle Adams, R. E. Wagner, R. L. Beacher, Francis Raymaley, Murry McJunkin, W. H. Garman and Ralph Everett.

Each of these events will add to a total picture of good selling to the good market of the Northeast, by showing the farmer why he needs more fertilizer and how to use it profitably.

Mississippi Forms Plant Food Council

The recent annual meeting of the Mississippi Fertilizer and Agricultural Workers Conference held in Biloxi, Mississippi on November 4, 5, and 6 was the occasion for the ground work which led to the development of a new organization to be known as the Mississippi Soil Fertility and Plant Food Council. H. S. Gordon, Jr., was elected the first president and Mike Blouin, Jr., was elected vice-president. The already active Advisory Committee of which Commissioner of Agriculture Si Corley is Chairman, will serve as the Board of Directors.

Committees are busy outlining objectives, making plans, and setting the machinery in motion for developing an organization that will render a real service to Mississippi Agriculture as well as the Industry itself. High on the agenda of activities for the council is the improvement of the Annual Fertilizer Conference. Details of the 1960 meeting are already being worked out and will be announced at a later date.

All fertilizer and related organizations doing business in Mississippi are urged to lend their support. This can first be done by sending the names, position, addresses, of company officials, salesmen, etc., who should be the council's mailing list to: Director, Feed and Fertilizer Control, P. O. Box 1609, Jackson, Mississippi.

NO MAJOR REPAIRS IN 25 YEARS*

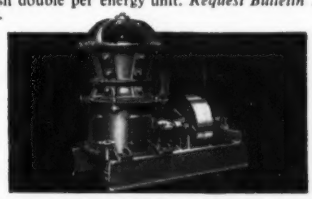
Sturtevant Construction Assures Long Mill Life at Top Loads

Sturtevant crushing and grinding machinery answers the long life top-load production problem for medium to small size plants. Many Sturtevants have been operating above rated capacities for more than 25 years, and *without a major repair.*

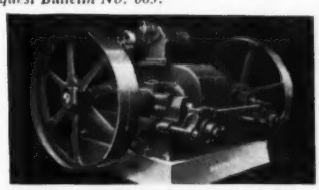
"Open-Door" design gives instant accessibility where needed — makes cleanouts, inspection and maintenance fast and easy. Machines may be set up in units to operate at equal quality and capacity.



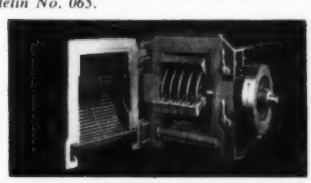
Jaw Crushers — Produce coarse (5 in. largest model) to fine (¼ in. smallest model). Eight models range from 2 x 6 in. jaw opening (lab model) to 12 x 26 in. Capacities to 30 tph. All except two smallest sizes operate on double cam principle — crush double per energy unit. *Request Bulletin No. 062.*



Rotary Fine Crusher — Reduce soft to medium hard 3 to 8 in. material down to ¼ to 1¼ in. sizes. Capacities up to 30 tph. Smallest model has 6 x 18 in. hopper opening; largest, 10 x 30 in. Non-clogging operation. Single handwheel regulates size. *Request Bulletin No. 063.*



Crushing Rolls — Reduce soft to hard 2 in. and smaller materials to from 12 to 20 mesh with minimum fines. Eight sizes, with rolls from 8 x 5 in. to 38 x 20 in.; rates to 87 tph. Three types — Balanced Rolls; Plain Balanced Rolls; Laboratory Rolls — all may be adjusted in operation. *Request Bulletin No. 065.*



Hammer Mills — Reduce to 20 mesh. Swing-Sledge Mills crush or shred medium hard material up to 70 tph. Hinged-Hammer Pulverizers crush or shred softer material at rates up to 30 tph. Four Swing-Sledge Mills with feed openings from 6 x 5 in. to 20 x 30½ in. Four Hinged-Hammer Pulverizers with feed openings from 12 x 12 in. to 12½ x 24 in. *Request Bulletin No. 084.*

**Reports Manager W. Carleton Merrill concerning Sturtevant Swing-Sledge Mill at James F. Morse Co., Boston.*

STURTEVANT
MILL COMPANY
153 Clayton St., Boston 22, Mass.

Southeastern Liquid Conference Set for February 9-11

A Southern Regional Liquid Fertilizer Conference will be held at Rock Eagle 4-H Club Center February 9-11. Rock Eagle is located near Eatonton, Ga., approximately 45 miles south of Athens, Ga., on U. S. Highway 441. Transportation will be provided from Athens to Rock Eagle for individuals who are traveling by air or train.

Outstanding speakers in industry, research and extension have been assembled to discuss the best available information regarding the use and manufacturing of liquid fertilizers and the possibilities of its use in the southeastern section of the United States.

This conference is jointly sponsored by the seven land-grant colleges in the Tennessee Valley states and the Tennessee Valley Authority. The primary purpose of this conference is to bring research, teaching, and Extension Agronomists, Economists and Agricultural Engineers at the land-grant institutions up to date on this important development. Industry representatives, as well as other interested personnel, are also invited to attend and participate.

Anyone desiring overnight accommodations at Rock Eagle should notify J. P. Carmichael, State Extension editor, or P. J. Bergeaux, Extension agronomist, University of Georgia, Athens.

Registration will be 3-5:00 p.m. February 9, with a 6:00 p.m. supper.

Wednesday, February 10th: 7:30 a.m., breakfast; 9:00 a.m. program welcome message by C. C. Murray, dean and coordinator, College of Agriculture, University of Georgia; 'Soil Fertility Problems Of The South,' by E. T. York, director, Agricultural Extension Service, Auburn University; 'Status Of Liquid Fertilizer,' by A. V. Slack, TVA; 'Comparative Agronomic Value Of Liquid Fertilizers,' by Tom Cope, agronomist, Auburn University; 'Methods Of Application Of Liquid Fertilizer,' by Gordon Futral, agricultural engineer, Georgia Experiment Station; and 'Economic Considerations Of The Use Of Liquid Fertilizer In The South,' by Roger Woodworth, agricultural economist, University of Georgia.

12:00—Noon—Lunch.

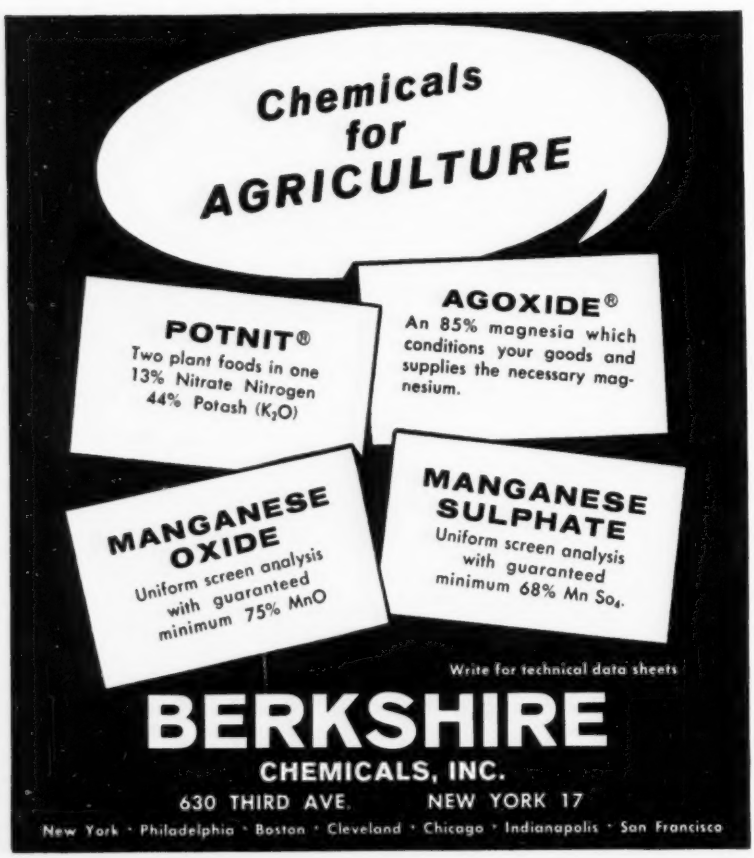
The Wednesday afternoon program includes: 'Sources Of Materials For Formulating Fertilizer Ratios Applicable To The South,' Earnest M. Harper, Aylco Fertilizer Co., Sullivan, Ill.; 'Problems Involved In Adding Secondary Elements, Trace Elements And Pesticides,' A. V. Slack, TVA; 'Corrosion Problems Involved In Liquid Fertilizer,' W. W. Arnold, Nitrogen Division, Allied Chemical Corporation; 'Comparative Costs In Producing Liquid And Solid Fertilizers,' Harold Walkup, economist, TVA; 'The Establishment And Operation Of Liquid Fertilizer Plants,' Hixen Guest, owner of a liquid fertilizer plant at Oglethorpe, Ga.; 'Equipment Needed For Handling, Delivery, And Storage Of Liquid Fertilizer,' Morris Woosley, Western Kentucky Liquid Fertilizer Co.; 'Custom Application vs. Farmer Application,' Ralph Sasser, assistant Duplin county agent, N. C.

That evening at a banquet George Scarseth of American Farm Research Assn. will be introduced by George King, director of Agricultural Research, University of Georgia.

Thursday, February 11th will feature group meetings: 'The Uses Of Liquid Fertilizer On Farms,' moderated by S. G. Chandler, chairman of Extension Training, Ga. Agricultural Extension Service; 'Research Underway And Needed,' moderated by J. W. Fitts, head, Department of Agronomy, N. C. State College; 'Production, Distribution, and Sale Of Liquid Fertilizers,' moderated by Ralph McKnight, chief, Test-Demonstration Branch, TVA; group reports will follow.

A panel on 'Educational Problems In Connection With The Use Of Liquid Fertilizers' will be moderated by W. W. Lewis, extension agronomist, Virginia Polytechnic Institute. Panelists will be: Emerson Collins, extension agronomist, N. C. State College; J. R. Johnson, extension agronomist, University of Ga., and W. E. Hunter, Macon (Ga.) county agent.

A summary 'The Future Of Liquid Fertilizers In The Southeast' will be presented by J. Fielding Reed, southern manager for American Potash Institute. The final afternoon will feature demonstration and inspection of equipment used with liquid fertilizers.



CF Staff-Tabulated TONNAGE REPORTS

FERTILIZER TONNAGE REPORT (in equivalent short tons) Compiled by Cooperating State Control Officials and Tabulated by COMMERCIAL FERTILIZER Staff

STATE	November 1959	November 1958	October 1959	October 1958	July-Sept. Quarter 1959	July-Sept. Quarter 1958	January-June 1959	January-June 1958	July-December 1958	July-December 1957	YEAR (July-June) 1958-59	YEAR (July-June) 1957-58
Alabama	32,554	29,453	38,714	59,626	91,258	90,651	846,309	734,077	199,265	172,721	1,045,574	906,798
Arkansas	3,019	4,062	8,516	12,171	41,802	42,100	289,365	226,889	64,092	62,752	353,132	289,641
Georgia	53,804	87,336	53,112	50,207	135,678	107,373	1,130,998	944,618	294,751	269,529	1,425,749	1,214,147
Kentucky	-------	7,210*	27,204	35,459	49,489	38,396	483,821	435,023	99,460	88,771	583,281	523,794
Louisiana	10,816	10,677	13,982	17,031	35,276	29,933	201,642	188,409	64,152	64,192	265,794	252,601
Missouri	23,877	40,147	66,272	113,535	147,812	164,296	563,055	420,615	370,036	335,312	926,111	755,927
N. Carolina	-------	27,189*	31,235	78,008	60,446	89,602	1,468,704	1,261,685	228,055	199,446	1,641,674	1,461,131
Oklahoma	4,606	3,478	20,242	19,371	45,939	43,410	64,738	55,964	68,848	51,436	133,586	107,400
S. Carolina	22,096	23,140	13,232	34,630	47,443	58,100	756,100	615,733	134,202	116,874	890,302	732,607
Tennessee	7,408	4,503	20,472	32,918	78,916	79,343	443,602	307,182	127,116	135,717	570,718	442,899
Texas	31,631	30,246	53,074	52,136	115,509	103,794	441,851	452,327	222,800	213,801	664,651	666,128
California		(reports compiled quarterly)			204,000	206,327	803,261	679,577	450,767	441,969	1,254,028	1,121,546
Virginia		(reports compiled quarterly)			68,631	76,031	618,965	549,773	160,178	140,783	779,143	690,556
Indiana		(reports compiled semi-annually)					856,316	795,506	316,341	284,959	1,172,657	1,080,465
New Hampshire		(reports compiled semi-annually)					16,143	16,053	4,746	3,966	20,889	20,019
Washington		(reports compiled semi-annually)					-------	158,286*	75,350	77,498	-------	235,784*
TOTAL	**157,257**	**233,042**	**346,055**	**505,092**	**1,122,199**	**1,129,356**	**8,984,870**	**7,683,431**	**2,880,159**	**2,659,726**	**11,727,289**	**10,265,659**

------- (not yet reported) * Omitted from column total to allow comparison with same period of current year.

US Borax Prepares Fertilizer Slide Rule

A clever slide-rule device has been prepared by U. S. Borax & Chemical which, by pulling a tab shows the proper pounds per acre of fertilizer to use on various crops, and is available from their sales offices and salesmen.

NPFI Releases New Color Film

"American farmers today are under attack — not because they've been lying down on the job but, strangely enough, because they've done too good a job of satisfying the Nation's food and fiber needs.

"Largely responsible for this dilemma has been the lack of objective information on the perennial 'farm problem.' Most people just don't have the facts that are necessary to make a fair appraisal of the present agricultural situation in the United States."

"In an effort to present the farmer's story objectively, the Institute has just produced a new public service film entitled, "Bread From Stone." Prints of the all color film, with a running time of about 15½ minutes, will be available after February 1, 1960. Prints will be available, on loan, to members of the Institute and public educational agencies.

Alternate dates should be given in making requests for prints, which should be directed to: Film Department, National Plant Food Institute, 1700 K Street, N. W., Washington 6, D. C.

New Lime Leaflet Offered by NPFI

An 8½" x 13" leaflet entitled "Lime Means More Money For You" has just been published by NPFI for use in promoting the proper use of lime.

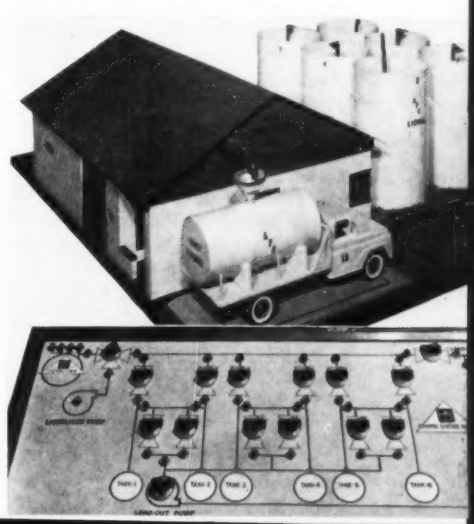
This leaflet is a reduced version of a large poster (22½" x 34") published recently by the Institute at the request of the Southeastern Industry Advisory Committee.

Both of these information pieces are available to Institute members in quantity at our reproduction cost, plus shipping charges. The poster, which sells at $10.00 per hundred, is folded to 8½" x 11" for ease in mailing. The leaflet, priced at $2.50 per hundred, is folded to 3¼" x 8½" so that it will fit a No. 10 envelope for mailing purposes.

Please order from the Washington, D. C. office of the Institute. An order blank is enclosed for your convenience.

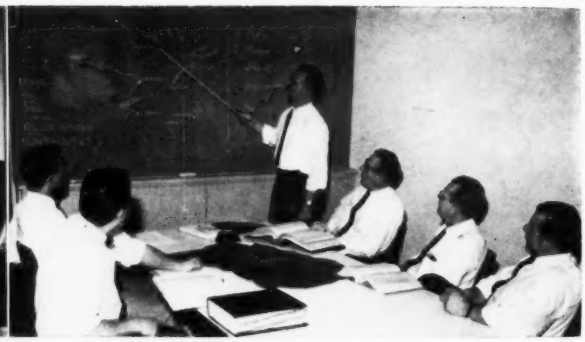
Liquid Plant Model

Pilot lights glow, pumps whirr and liquid actually flows in this working model of a liquid fertilizer processing plant prepared by the Chemical Plants Division of Barnard & Leas Mfg. Co., Inc., Cedar Rapids, Iowa, for use as a display at meetings. The tanks and building on this model occupy space only a little more than a yard wide, but the control panel shown is an actual Graphic Control Panel, such as that mounted on B & L's Autobatch equipment for the formulation and production of complete analysis neutral solution liquid fertilizers. The model, of course, does not produce fertilizer, but it does produce high interest at an equipment show. This was demonstrated recently at St. Louis during the National Fertilizer Solutions convention, where the exhibit was first used. Secret of the interest aroused is that visitors to the exhibit can work the graphic control panel, routing fertilizer to and from numbered tanks, or to a waiting truck, merely by the manipulation of the control knobs. As in a real B&L plant, design of the control panel prevents accidental admixture from one tank to another, thus dramatizing how this automatic equipment virtually eliminates human error that might be expected with manual controls.





Left: Eugene Landis (left), director of transportation for International Minerals & Chemical Corporation, reviews plans for three month tour of fertilizer manufacturing companies with Walter Knorst, assistant director. Eight IMC traffic men start the tour in January. They will attempt to help solve transportation problems faced by IMC customer companies in the plant food industry.



Right: Variety of transportation methods and routes is pointed out by Eugene Landis at staff meeting in preparation for the tour. Left to right: Kenneth Hessler, William Conforti, Mr. Landis, Walter Knorst, Ronald Ellwing, and Charles Scervino. In addition to these six, George McMaster and Dominic Persino also will make the tour of customer companies.

IMC Traffic Experts Begin 'Men with a Mission' Tour

A full scale effort to help fertilizer manufacturers solve their transportation problems is being launched this month by traffic specialists of International Minerals & Chemical Corporation as part of the 'man with a mission' phase of its Full Orbit program.

Eight IMC transportation representatives will call on fertilizer companies across the country during the three-month program. Their mission will be to supply the latest and best answers to the numerous transportation questions that daily confront the manufacture, according to Eugene Landis, IMC director of transportation.

Information and counsel would cover both inbound and outbound shipments. Depending on individual needs, the IMC men will work with the manufacturers in the following areas:

Routing and freight rates: This includes securing the fastest and most economical route of getting the order to the manufacturer, and helping him with up-to-date information on latest freight rates, quantity shipments, and freight equalization.

Formal and informal complaints: Each of the eight IMC men is licensed to practice before the Interstate Commerce Commission, and can be helpful in dealing with the commission.

Plant location studies and warehousing: Important factors in the manufacturers' profit and loss picture.

Technical assistance and negotiation with carriers: The IMC men will explain the regulations and the routines of transportation companies, explain carrier terminology and responsibility, and help in negotiations for spur tracks or acquiring land for plant sites or docks.

Car supply and barging: This covers help in obtaining tank cars, hoppers, and barges in times of tight supply.

Tariff interpretation and freight claims: Each of the eight IMC traffic representatives is a graduate of a fully accredited transportation school, with years of experience in studying traffic quirks. Mr. Landis pointed out that IMC, as a major shipper, has the manpower and knowledge to be helpful in claim negotiations.

Transit arrangements: An explanation of how manufacturers can sometimes save on transportation costs by arranging for stops in transit for storage and bagging or for processing.

In addition to these principal every-day transportation topics, the railroad strike situation may be one of the problems uppermost in the minds of fertilizer manufacturers.

"We couldn't have picked a more important time to launch this transportation service," Mr. Landis said. "The railroad labor situation appears to be the most critical in the last 10 years."

IMC customer companies will be given the latest information available on impending tieups, and how they can minimize adverse affects in their area and in their industry should a disruption in rail service occur, he said.

The transportation program is a concrete expression of the total service concept of IMC's Full Orbit customer service philosophy. It fits in with sales and marketing counsel, technical service, and other programs geared to improving the profit of the customer companies in the plant food industry.

To coincide with the stepped-up transportation service, IMC this month is inaugurating a Transportation News-Letter, which will go out regularly to the fertilizer manufacturer.

It will contain information developed at rate hearings and industry meetings, and from trade publications and transportation news letters. This will be boiled down and aimed specifically toward the fertilizer industry.

IMC officials say the news letter and the programmed visits are unique to the plant food industry. They list a number of reasons why the company is in position to offer transportation service and counsel:

1. Traffic personnel qualifications: In addition to being graduates of transportation school and licensed to practice before the Interstate Commerce Commission, they average 16 years actual traffic experience, a total of 128 years' service.

2. The nature of IMC's business, which includes transporting millions of tons annually of all the raw materials used in plant foods, including the minor elements.

3. The company's location in the Chicago area, transportation center of the country for rail, highway, barge, and plane carriers. Numerous traffic organizations—both ship-

per and carrier—are headquartered in Chicago, and IMC men serve on many of their committees.

Mr. Landis and Walter Knorst, assistant director of transportation, will be among those visiting fertilizer companies. Others will be Charles Scervino, Ken Hessler, Dominic Persino, William Conforti, George McMaster, and Ronald Ellwing.

Although each of the eight has a variety of experience, some have tended heavily in one direction—barge traffic, for example. Thus it is possible that a question on barge movement might be referred back to another member of the transportation team.

In addition the director and assistant director will review any unusual problems during follow-up conferences at IMC's Skokie, Illinois, headquarters, and the answers will be reported to the customer company. In most instances, the IMC man on the scene will be able to provide the needed information.

To call attention to the tour, IMC salesmen in December began showing of a 14-minute sound color slide film, "Pathway to Profit," which reviews some of the transportation services already offered by the company, including special loss or damage claims.

"Many of the services we are talking about have been available from IMC for a number of years," Mr. Landis said. "But the fertilizer manufacturer may not have known about them, or may have felt he was bothering us to call and ask for help. Now we're going to go out and promote them as part of the Full Orbit package."

Promotions for the service include advertising, direct mail pieces, and a slide film.

"Transportation costs, production costs, and material costs each account for about a third of the total plant food cost," Mr. Landis noted. "We want the manufacturer to know that transportation is not just a fixed cost over which he has no control. We think that use of our resources and our experience will be helpful in bringing to the attention of customers areas in which inbound and outbound transportation costs and services can be more closely controlled in bringing about more profitable operations."

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DESIRE CHANGE—Sales management or basic supplier representative. Well rounded experience in management, agronomy, production, sales of liquid and solid fertilizers; also agricultural chemicals. Box #1, % Commercial Fertilizer, 75 Third St. N. W., Atlanta 8, Ga.

WANTED: Position as Plant Manager or Superintendent. 25 years experience in production of fertilizer and phosphates. 8 years experience in granulating; have installed several granular units and supervised the building of several plants. Married, 44 years old. Reply Box 3, % Commercial Fertilizer, 75 Third St., N.W., Atlanta 8, Ga.

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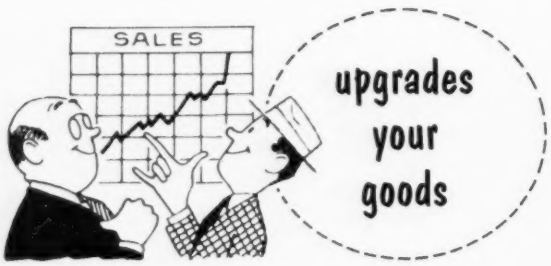
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